

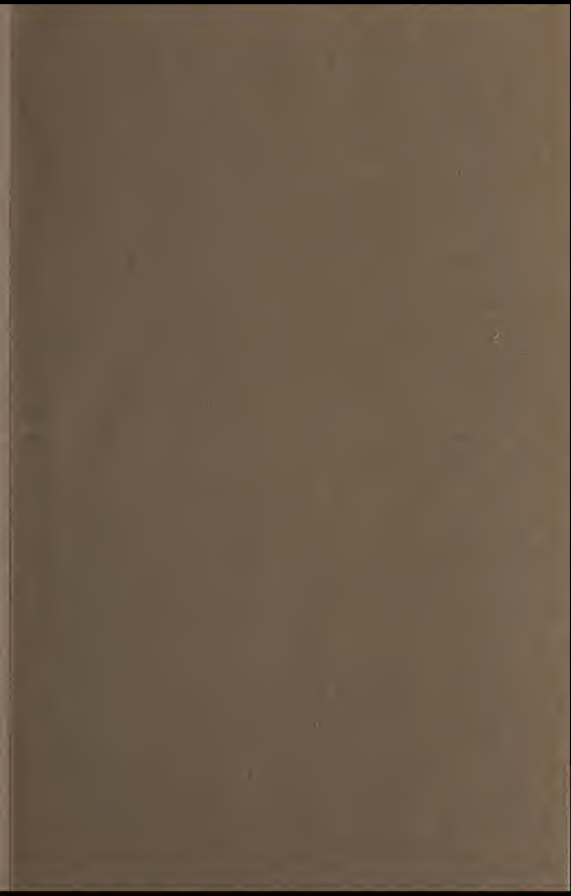


GUACANAGARI	PONTIAC	BLACK HAWK
MONTEZUMA	CAPTAIN PIPE	KEOKUK
QUATIMOTZIN	LOGAN	SACAGAWEA
POWHATAN	CORNPLANTER	BENITO JUAREZ
POCAHONTAS	JOSEPH BRANT	MANGUS
SAMOSET	RED JACKET	COLORADAS
MASSASOIT	LITTLE TURTLE	LITTLE CROW
KING PHILIP	TECUMSEH	SITTING BULL
UNCAS	OSCEOLA	CHIEF JOSEPH
TEDYUSKUNG	SEQUOYA	GERONIMO
	SHABONEL	



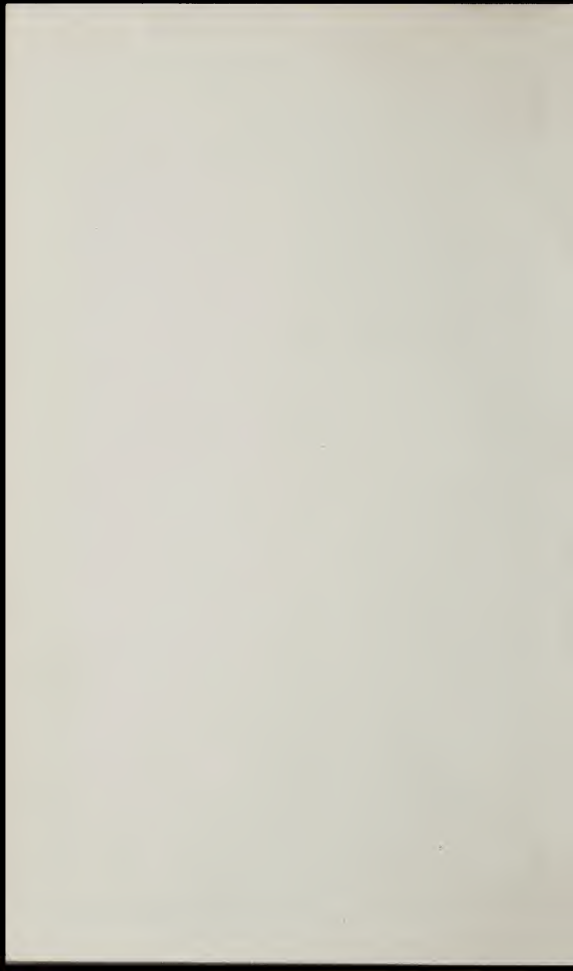
TO PERPETUATE THE HISTORY
AND DEVELOPMENT OF THE
PEOPLE REPRESENTED BY THE
ABOVE CHIEFS AND WISE MEN
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EDWARD EVERETT AYER

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DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS

TENTATIVE COURSE OF STUDY

FOR

UNITED STATES INDIAN SCHOOLS



PREPARED UNDER THE
DIRECTION OF
COMMISSIONER OF INDIAN AFFAIRS



WASHINGTON
GOVERNMENT PRINTING OFFICE
1915



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PREFACE.

OFFICE OF INDIAN AFFAIRS,
Washington, December 1, 1915.

The accompanying Course of Study has been prepared for use throughout the Indian school service and is to be adopted therein.

It emphasizes the study of home economics and agricultural subjects, because any attempt to change the Indian population of this country from a dependent to an independent people within a reasonable length of time must give special consideration to the improvement of the Indians' homes and to the development of their lands. The usual subjects of school instruction are not neglected, but they are subordinated to subjects which, if learned practically, lead directly to productive efficiency and self-support.

This edition is tentative and is placed in the schools at this time for the purpose of inviting constructive criticisms and suggestions which will be considered in connection with a revised and more permanent edition.

CATO SELLS, *Commissioner.*

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COURSE OF STUDY OUTLINED FOR UNITED STATES INDIAN SCHOOLS.

INTRODUCTION.

The need of a standard and uniform course of study for the Indian schools of the country has long been felt. Such a course must be definite in character and yet sufficiently flexible to make it adaptable to local conditions in an area as extended as the United States. At the same time it is realized that an outline too general in character would be of little or no actual value for its purpose.

Indian schools must train the Indian youth of both sexes to take upon themselves the duties and responsibilities of citizenship. To do this requires a system of schools and an organization capable of preparing the Indian young people to earn a living (1) among their own people or (2) away from the reservation home and in competition with their white brethren. This does not contemplate a college or university, or even a preparatory school for college entrance, but a practical system of schools with an essentially vocational foundation. In other words, the Indian needs a school that will fit him as fully as possible for the life of his immediate future and the changing conditions that may mark his remoter future. The school should accomplish this as quickly as is compatible with thoroughness.

The economic needs of all people—of the Indian especially—"demand that the schools provide for instruction along eminently practical lines. To this end industrial schools have been established in which the culture value of education is not neglected, but rather subordinated to the practical needs of the child's environment. They aim to provide that form of training and instruction which leads directly to self-support and productive efficiency."

In our Indian schools a large amount of productive work is necessary. They could not possibly be maintained on the amounts appropriated by Congress for their support were it not for the fact that students are required to do the washing, ironing, baking, cooking, sewing; to care for the dairy, farm, garden, grounds, buildings, etc.—an amount of labor that has in the aggregate a very appreciable monetary value. This plan requires the Indian student to work half

a day and to attend classroom exercises during the other half. With studies properly adjusted to the student's mental status and with non-essentials and useless repetition eliminated from the courses, this condition is not a handicap to the progress of the student. Indeed it has been demonstrated in schools for whites that pupils can complete a grade a year even when taking academic work but half a day and doing vocational work during the other half. In his annual report for 1913 the United States Commissioner of Education makes this statement:

Careful studies in different parts of the country and in schools of different kinds indicate that children really do not study in school more than an average of three hours a day, whatever may be the length of the daily session. For children in the primary grades the time is less; for the high-school grades somewhat more. This includes not only the time children give to their studies out of class, but the time when they are really attending their work in class. This indicates the desirability of reorganizing school work in such a way as to give three hours a day for intensive school work of the ordinary type and to provide four or five hours of productive work suited to the capacities of the children either at home, in shops under good conditions, in outdoor gardens, or in shops provided by the school.

DIVISION OF THE COURSE.

The course of study is separated into three divisions—(1) primary, (2) prevocational, and (3) vocational. The primary division includes the first three grades, the prevocational division includes the next three grades, and the vocational division contemplates a four-year course above the sixth grade. The first group is the beginning stage, the second group is the finding stage, and the third group is the fitting stage. In the first six years the course parallels the public-school courses in the essentials of the academic work. During this period the principles are to be taught and the application of them is to be made just as soon after instruction as possible. The knowledge of industrial and domestic activities at this stage center more or less around the conditions essential to the proper maintenance and improvement of the rural home. This is the period when the boys and girls, through trying out their capacities, are finding that activity to which it is thought best to apply themselves definitely in the vocational period. The course has been planned with the vocational aim very clearly and positively dominant, with especial emphasis on agriculture and homemaking. The character and amount of academic work has been determined by its relative value and importance as a means of solution of the problems of the farmer, mechanic, and housewife. All effort is directed toward training Indian boys and girls for efficient and useful lives under the conditions which they must meet after leaving school.

In the first or primary period the Indian child comes into what is to him a strange land with a strange tongue, strange habits, customs, and standards. He is lacking that five years or so of fundamental home education which most white children receive in our American ways of thinking, doing, and living. Those who have taught only white children do not always appreciate the influence which this preliminary home training has upon the later results when the child enters the primary grade. The Indian child comes to school lacking that important foundation; therefore we must accomplish all that the white child has gained at home in addition to the normal work of the primary grades.

In order that the course of study may be understood as an articulated whole, it is requested that all instructors in day schools as well as boarding schools familiarize themselves with the entire course.

GENERAL SUGGESTIONS.

HEALTH.

In his native state the Indian led an active life in the great outdoors. He lived close to nature and developed great physical endurance and bodily vigor. With the coming of the white man the Indian was forced gradually to change both his occupation and his mode of living. Restricted to reservations he no longer follows the chase as his chief occupation or locates at will his camp, selected and frequently changed to meet the varying demands of his economic conditions, but he lives on a farm or in a village and the house has taken the place of the more simple habitation, the tepee. He could move his tepee at will, but his house, no matter how insanitary its surroundings, must remain stationary. Without a knowledge of the laws of health and sanitation or the capacity to adjust himself properly to his new type of home, many tribes of Indians have gradually degenerated physically until to-day we find confronting us the great problem of restoring his health. This can best be done, perhaps, through the medium of the schools.

This course of study contemplates the emphasizing in the schools of all subjects relating to health and sanitation. It aims to prepare students to return to their homes with very definite, practical ideas and with fixed habits as to correct living and good health.

VOCATIONAL GUIDANCE.

Assisting pupils to find themselves, and in the selection of the course of study leading to a profession, business, or trade to which they are to devote themselves, and to the building of a successful career in their chosen vocation, is of such great moment that each school giving a prevocational course is directed to establish a vocational guidance committee which shall consist of the superintendent as chairman, and not less than three other members appointed by him.

Pupils should be carefully guided by their instructors in their work during the prevocational division in order that at its close they may have a good knowledge of the demands which will be made on them if they are to be successful in the different vocations. During the latter half of the last year of that division they should be directed to seek counsel from the committee on vocational guidance.

Many of the failures and partial failures in life are undoubtedly due to merely drifting into employment or to a mistake in selecting a vocation. No better service could be rendered a pupil than assisting him to a wise selection of the work for which he is best fitted.

In order to do this work intelligently the guidance committee should be persons of such mature judgment, wide knowledge of life, strong character, and positive personality as to inspire confidence and respect; they should also have a good knowledge of the requirements and conditions of success, wages, supply and demand, and advantages and disadvantages of the different lines of industry. In addition, they should make a thorough study of the nature, needs, and possibilities of the student which will then place the committee in a position to guide boys and girls to the best selection of a life work.

STUDENT RECORDS.

(See rules for the Indian school service.)

REPORTS.

Reports should be submitted promptly, giving special care to accuracy, clearness, neatness, and conciseness.

LENGTH OF SCHOOL YEAR AND HOLIDAYS.

(See rules for the Indian school service.)

YEARLY SCHOOL CALENDAR.

(See rules for the Indian school service and circular letters.)

HEATING, VENTILATION, LIGHTING, SEATING, ETC.

Among the prerequisites to good classroom work are proper seating, ventilating, heating, and lighting of the classrooms. All these are matters of great importance and will be dealt with in detail in special bulletins.

PSYCHOLOGY OF THE INDIAN CHILD.

In dealing with all children, whether Indian or white, we must not lose sight of the fact that interests, powers, and instincts should be utilized in the process of the child's education. It is known that the child can be better introduced to the realm of knowledge through his own observations and experiences than through the agency of books. It is certain that more children find themselves through the agency of things than through the mere reading of books. This is but another way of stating the truism that constructive work, after

all, motivates all the other work of the school. This in itself is ample justification for the industrial and prevocational activities as a most important factor in the work of the schools.

It is not desired to emphasize any peculiar mental or other traits of the Indian, but we must deal with him as he exists. His self-consciousness, bashfulness, and unfamiliarity with school life often make him unduly reticent, especially during the earlier years of school life. Due consideration must also be given to the almost unnatural sensitiveness of the Indian child to ridicule. It will require great tact, patience, ingenuity, and enthusiasm on the part of the teacher to inspire the Indian pupil with interest sufficient to arouse him from his self-consciousness into doing things before his bashfulness inhibits the effort. Each successful effort of this kind makes easier the following one.

ESSENTIALS AND NONESSENTIALS.

Instructors should use great care in the selection of material for teaching and should eliminate those things which are foreign to the subject, or not pertinent. The length of time to be spent on a topic should be very carefully considered and its importance might be measured by its effect and by its relation to ways of living, both present and future.

LESSON PLANS.

A well-planned lesson is one so simple that it can be accomplished and at the same time so interesting that it awakens enthusiasm.

Instructors should ever bear in mind that a well-planned lesson is the continuation of previous lessons and forms the basis for lessons to follow, as well as being correlated with other academic and industrial subjects.

Instructors should have a definite purpose for each lesson and then teach the lesson with that purpose in view. Aimless teaching never accomplishes anything and robs pupils of valuable time.

Each lesson should be carefully planned and conform in general to the following outline:

- (a) Purpose of the lesson.
- (b) Subject matter.
 - 1. From the text.
 - 2. Supplementary.
- (c) Material to be used in connection with the subject matter for illustrative purposes or for performing experiments.
- (d) Method of procedure.
- (e) Application.
 - 1. Direct value.
 - 2. Derived value.

IMPORTANT PRINCIPLES IN MAKING A SCHOOL PROGRAM.

(a) The daily program, showing the activities of the school for one week, should provide for study periods, as well as recitation periods for academic and industrial work.

(b) The time for and length of each period should be shown.

(c) Definite work should be planned for each period for the pupils for each entire day.

(d) The length of the recitation periods should depend on the age of the pupils and the relative value of the subject in the curriculum.

(e) The program must be adapted to fit the need of the particular school.

(f) Writing and drawing, which require steady nerves, should not come immediately after a recreation period.

(g) Those studies that require the greatest expenditure of nerve force should have the most favorable time on the program.

(h) Teachers should have programs which they can faithfully follow.

(i) Where there are a large number of grades in the school the teacher can reduce the number of recitations by combining classes, grades, and divisions, and by alternating general lessons, classes, or subjects.

(j) A copy of the daily program should be posted in the school-room in a place which is accessible to the pupils. It should also be copied in the school register.

ORAL REVIEWS AND WRITTEN TESTS.

In the daily work, pupils should be given frequent oral reviews, and a written review should be given on the completion of a major topic of a subject rather than at any arbitrarily specified time.

EXAMINATIONS.

In order to assist instructors in determining whether pupils should be promoted from the third and succeeding grades, uniform formal examinations are to be given each grade throughout the service.

In making averages of ratings, instructors will consider also the relative weight of the different subjects, which may be determined by the proportionate time spent upon them weekly. To find the final averages, the ratings for the pupil's daily work and the final formal examination will be added and divided by two.

In determining whether a pupil should be promoted, instructors will consider whether he is able to be reasonably successful in the next higher grade rather than whether he has comprehended thoroughly everything within the grade he desires to leave.

No pupil will be promoted unconditionally who has obtained a general average of less than 75 and who has a rating of less than 60 in any one subject.

Pupils who have obtained a final average of 75 and who have fallen below 60 in not more than two subjects may be promoted by being conditioned in those subjects, which should be made up during the next grade or year.

CERTIFICATES OF PROMOTION.

At the close of the work for each grade a certificate of promotion shall be issued to each pupil giving his ratings in the academic and industrial work as well as stating whether or not he is promoted.

On the completion of any vocational course a diploma should be given the pupil showing his attainments.

TRANSFERS.

(See Rules for the Indian School Service and Circular Letters.)

CURRENT EVENTS.

This subject should be emphasized in every school organization. It widens the pupil's horizon and develops better habits of mental perspective; it places the pupil in a direct relation to the world's events which are actually occurring, acquainting him with current events and the current thought of the day; it develops a general culture because of the acquaintance with current thought and literature; it teaches discrimination in the selection of magazines, newspapers, and other forms of periodical literature and the subject matter covered by them; it develops more regular and practical habits of reading; it develops the capacity to freely discuss current events and problems of the day; and it inculcates the art of courteous disagreement and the acquirement of the open mind amenable to reason.

Few Indian homes possess books and few Indians purchase books. The average Indian home possesses few magazines. It seems very certain therefore that a large portion of the reading at home, if done at all, will be of newspapers, though a few may read magazines. It is the duty of the school to cultivate proper and profitable habits of reading magazines and books as well as newspapers. The school should endeavor to develop in the pupil a liking for the better class of newspapers and periodicals, teaching him to read chiefly those things which bear more directly on his interests. The pupil should be trained not only to read but also to report on items read.

The work in current events can be done in connection with the general exercises of the school; it should have a period at least once a week in the opening exercises.

Encourage the pupils to report on or discuss important news items. Discourage as far as possible the consideration of trivial or unimportant events and especially those which are essentially scandalous or criminal—except where an immediate moral lesson is conveyed which is very apparent even to children. Discuss:

1. Local matters of the neighborhood, town, county, and State.
2. Political, financial, and social topics.
3. Topics having historical significance.
4. Educational topics.
5. Agricultural and industrial topics.
6. Domestic topics.
7. Biographical sketches of persons of prominence.

The teacher may even indicate topics in advance. Pupils may be designated to keep track of one kind of news for a definite time—such as political, commercial, industrial, agricultural news, etc., each designated pupil, or group of pupils, being encouraged to read widely with a view to reporting on the special classes of news matter assigned. This should not only stimulate emulation, but should also give distinct training in discrimination and selection in reading. He who acquires such tastes and powers may continue to educate himself all through life. Clippings may be made from periodical literature and newspapers which can be filed and used later as reference material. Such material may be mounted in books or filed in indexed envelopes.

USE AND SCOPE OF LIBRARY.

A school which does not possess a good working library is at a very material disadvantage. There should be books for little people as well as for more advanced pupils, and especially for the returned students. The library should contain not only supplemental material for the school, but general reading matter for circulation as well. The library should extend its influence and power for good by visiting the home.

In order to assist pupils in making wise and proper selection, teachers should make out lists of suitable and desirable books and post them where they are accessible to the pupils. The lists should suggest the grade for which the books are suitable so that the younger children may not ask for books entirely beyond their comprehension.

All persons coming into direct contact with Indians, especially in their homes, can greatly extend the work begun in the Indian schools by influencing Indians, especially returned students, to obtain or subscribe for suitable magazines and periodicals and to read suitable books which may be placed in their hands. Farmers and field matrons can give particularly good service along these lines. When pupils go from school to bookless homes, they ordinarily lose simulta-

neously access to a good library and also the help and inspiration of the teachers and the school environment. Too often they lose also the stimulus to good reading.

Some Indians are able to purchase reading matter and to subscribe for periodicals and would do so with proper encouragement. Alert and interested employees (especially matrons, farmers, and teachers) will find a way to divert to the use of those unable to supply themselves much good reading matter which would otherwise be of no further use. Household magazines for the girls and farm papers or other trade papers for the boys will aid in keeping fresh in their minds the practical lessons learned at school. General reading matter will keep them in touch with current events and with the interests and ideals inculcated at school.

COMMUNITY MEETINGS AND RETURNED STUDENTS.

Community meetings for adult Indians should be held under the auspices of every Indian school which has an adult Indian population accessible or tributary thereto. In fact the school is missing one of its finest opportunities if it neglects to constitute itself as the community center. This is particularly true of most of our day schools. The school can and should contribute in many ways to the success and interest of such community meetings, and often the school can well be the host. These meetings should be regularly scheduled and as often as suitable arrangements can be made, but in no case less often than twice a year. If frequent community meetings can be arranged, they may be utilized for many useful purposes. The ex-student should be especially invited and urged not only to attend these meetings but also to take an active part in the real work of such gatherings. Community meetings should be made bases and centers of influence for all the activities and interests of the community or in influencing healthy and proper public sentiment toward such activities. Out of such meetings should grow returned student organizations; organizations for promoting and fostering local native industries; organizations for demonstrating improved methods of domestic life, especially of canning surplus fruits and vegetables; and other similar general and beneficent organizations. It can be arranged very easily to have simple and practical talks on health, temperance, farm topics, etc. It might also be possible to arrange for exhibitions of academic, industrial, and school garden work. In fact, the possibilities which may grow and develop from well-conducted community meetings are almost limitless.

The Indians generally should be encouraged to interest themselves in neighborhood, local, county, and State matters—in fact, some of

the work designated under "Current Events" might be profitably undertaken in connection with community meetings. All organizations, whatever may be their name or nature, should contribute toward the social, intellectual, and industrial betterment of our Indian people.

In connection with community meetings, some forms of extension work might be undertaken, especially with the returned student. The returned-student organization should afford a peculiarly valuable medium for such work. The ex-student represents one of the direct returns upon the investment which the Government has made in Indian education. It is an investment which should be developed to its fullest extent—and its development has but begun when the student goes home after finishing his course at school. Then, if ever, the student needs friendly interest, wise counsel, and sympathetic support to hold him to his highest ideals and possibilities. Field matrons and farmers particularly should keep in touch with returned students of both sexes and keep the superintendent fully advised as to progress made or not made by them.

Superintendents are instructed to make reports to the Indian Office on each ex-student. Blanks will be supplied by the office. It is intended that such reports shall be filed finally with the school in which the ex-pupil was last enrolled.

NATIVE INDUSTRIES.

Where native materials, such as grass, roots, fibers, etc., are available for classroom use, Indian methods of hand weaving should be used in seat work to the exclusion of such things as paper weaving.

Native industries differ as to locality and environment. Where such industries have been or can be locally developed to a degree of economic importance they should undoubtedly be encouraged; where they can not have much economic importance they may, nevertheless, afford opportunities to capitalize odd moments of time by utilizing materials readily accessible.

OUTLINE OF COURSE OF STUDY.

PRIMARY DIVISION.

DAY SCHOOLS.

The time assigned to a subject indicates its relative importance.

First Grade:

General Exercises.....	{	Music.	
(15 minutes.)		Manners and Right Conduct.	
			{
			Personal experiences and observations.
			Nature study.
			Health.
			Activities of home, school, and community.
			History.
			Picture study.
			Reproductions.
			Stories.
			Dramatization.
			Numbers, etc.
			Memory work
English.....	{	Conversational and other oral exercises.	
(90 minutes.)			
		Reading.	
		Spelling.	
Writing and Drawing (alternate).			
(20 minutes.)			
Industrial Work.			
(60 minutes.)			
Occupation and Study.			
(85 minutes.)			
Recreation.			
(90 minutes.)			

Second Grade:

General Exercises.....	{	Music.	
(15 minutes.)		Manners and Right Conduct.	
			{
			Expand on work of first grade.
			Health.
			History.
			Geography.
English.....	{	Conversational and other oral exercises.	
(70 minutes.)			
		Reading.	
		Spelling.	
Numbers.			
(20 minutes.)			
Writing and Drawing (alternate).			
(20 minutes.)			
Industrial Work.....	{	Sanitation.	
(60 minutes.)		Gardening.	
		Sewing.	

Occupation work and study.

(85 minutes.)

Recreation.

(90 minutes.)

Third Grade:

General Exercises..... (15 minutes.)	{ Music. Civics. Manners and Right Conduct.
English..... (70 minutes.)	{ Conversational and other oral exercises. Reading. Spelling. Language (written) and mechanics.
Arithmetic. (30 minutes.)	{ Continue work of grade 2. Health. History. Geography. Gardening. School activities, as games, industrial work, etc.
Writing and Drawing (alternate). (20 minutes.)	
Industrial Work ¹ (90 minutes.)	{ Gardening. Repair work. Sanitation. Sewing. Cooking. Housekeeping.
Occupation work and study. (105 minutes.)	
Recreation. (90 minutes.)	

BOARDING SCHOOLS.

The time assigned to a subject indicates its relative importance.

First Grade:

General Exercises..... (25 minutes.)	{ Assembly, once each week. Music, once each week. Manners and right conduct, once each week. Current events, once each week. Conversational and other oral exercises.
English..... (110 minutes.)	{ History. Health. Numbers. Nature study. Reading and written exercises.
Writing and Drawing (alternate). (20 minutes.)	

¹ All the pupils in the first and second grades who have reached the age of 10 years are to be given this work.

Breathing Exercises.

(10 minutes.)

Industrial Work.....Small and young pupils should not be required to work
(240 minutes.) full time.

Physical Training.

(60 minutes.)

Evening hour.....Little folks, free play. Adults, miscellaneous exercises
(60 minutes.)

Meals, free time, extra detail.

(6 hours 15 minutes.)

Sleep.

(9 hours—10 hours for little folks.)

Second Grade:

General Exercises.....	{	Assembly, once each week.
(25 minutes.)		Music, once each week.
		Manners and right conduct, once each week.
		Current events, once each week.
		(Conversational and other oral exercises.
		History.
		Health.
English.....	{	Reading.
(90 minutes.)		Nature study.
		Mechanics of language and written exercises.
		Spelling.

Arithmetic.

(20 minutes.)

Writing and Drawing (alternate).

(20 minutes.)

Breathing Exercises.

(10 minutes.)

Industrial Work.....{ Small and young pupils should not be required to work
(240 minutes.) full time.

Physical Training.

(60 minutes.)

Evening hour.....{ Little folks, free play.

(60 minutes.) { Adults, miscellaneous exercises.

Meals, free time, extra detail.

(6 hours 15 minutes.)

Sleep.

(9 hours—10 hours for little folks.)

Third Grade:

General Exercises.....	{	Assembly, once each week.
(25 minutes.)		Music, once each week.
		Manners and right conduct, once each week.
		Current events, once each week.
		(Civics, once each week.
		(Conversational and other oral exercises.
		History.
		Health.
English.....	{	Reading.
(80 minutes.)		Geography.
		Mechanics of language and written exercises.
		Spelling.

Arithmetic.
(30 minutes.)
Writing and Drawing (alternate).
(20 minutes.)
Breathing Exercises.
(10 minutes.)
Industrial Work.
(240 minutes.)
Physical Training.
(60 minutes.)
Evening hour.
(60 minutes.)
Meals, free time, extra detail.
(6 hours 15 minutes.)
Sleep.
9 hours--10 hours for little folks.

PREVOCATIONAL DIVISION.

BOARDING SCHOOLS.

The time assigned to a subject indicates its relative importance.

Fourth Grade:

General Exercises (25 minutes.)	{	Assembly, once each week.	{	Review work of previous grades.
		Current events, once each week.		Stories of travel.
		Music, once each week.		History.
		Manners and right conduct, once each week.		Personal experiences and observation of the pupils.
		Civics, once each week.		Dramatization.
English (60 minutes.)	{	Conversational and other oral exercises (Five 20-minute lessons per week.)	{	Nature study.
				Agriculture.
				Games.
				Picture study.
				Reading (Five 20-minute lessons per week.)	Readers.
		Language (Two 20-minute lessons per week.)	{	Classics.
				History.
				Nature.
				Mechanics of language and written exercises.
				Spelling. Three 20-minute lessons per week.)

Arithmetic.
(30 minutes.)
Geography { 3 lessons per week.
Physiology and Hygiene. { 2 lessons per week.
(30 minutes.)

Writing and Drawing (alternate).

(25 minutes.)

Breathing Exercises.

(10 minutes.)

Industrial Work..... {Instruction, 30 minutes.
Production, 210 minutes.

(240 minutes.)

Physical Training..... {Competitive group games, two or three times per week.
Military and gymnastic drills, two or three times per week.

(60 minutes.)

Evening hour..... {Study, at least three nights each week.
Literary and debating societies..... }
Entertainments..... } Other nights.
Religious instruction..... }

(60 minutes.)

Meals, free time, extra detail.

(6 hours 15 minutes.)

Sleep.

(9 hours.)

Fifth Grade:

General Exercises..... {Assembly, once each week.
Current events, once each week.
Music, once each week.
Manners and right conduct, once each week.
Civics, once each week.

(25 minutes.)

Conversational and other oral exercises. } For outline see fourth grade.
(Five 20-minute lessons per week.) }

Reading..... {Readers.
Classics.
History.
Nature.

English..... {
(60 minutes.) }

Language..... {Mechanics of language and written exercises.
A great deal of the development of mechanics of language is to be taught with oral exercises.

Spelling.
(Three 20-minute lessons per week.)

Arithmetic.

(30 minutes.)

Geography..... } 3 lessons per week.

Physiology and Hygiene. } 2 lessons per week.
(30 minutes.) }

Writing and Drawing (alternate).

(25 minutes.)

Breathing Exercises.

(10 minutes.)

Industrial Work..... (240 minutes.)	{ Instruction, 30 minutes. Production, 210 minutes.
Physical training..... (60 minutes.)	{ Competitive group games. (Two or three times per week.) Military and gymnastic drills, two or three times per week.
Evening hour..... (60 minutes.)	{ Study, at least three nights each week. Literary and debating societies. Entertainments. Religious instruction.
	{ Other nights.
Meals, free time, extra detail. (6 hours 15 minutes.)	
Sleep. (9 hours.)	

Sixth Grade:

General Exercises..... (25 minutes.)	{ Assembly, once each week. Current events, once each week. Music, once each week. Manners and right conduct, once each week. Civics, once each week.
	{ Conversational and other oral exercises..... (Five 20-minute lessons per week.)
English..... (60 minutes.)	{ For outline see fourth grade. Reading (Five 20-minute lessons per week.) Language..... (Two 20-minute lessons per week.) Spelling. (Three 20-minute lessons per week.)
	{ Readers. Classics. History. Nature. Mechanics of language and written exercises. A great deal of the development of mechanics of language is to be taught with oral exercises.
Arithmetic. (30 minutes.)	
Geography.....	{ 3 lessons per week.
Physiology and Hygiene. (30 minutes.)	{ 2 lessons per week.
History.....	{ 3 lessons per week.
Writing or Drawing (25 minutes.)	{ 2 lessons per week.
Breathing Exercises. (10 minutes.)	
Industrial Work..... (240 minutes.)	{ Instruction, 30 minutes. Production, 210 minutes.

Physical Training. (60 minutes.)	{ Competitive group games, two or three times per week. Military and gymnastic drills, two or three times per week.
Evening hour. (60 minutes.)	{ Study, at least three nights each week. Literary and debating societies. Entertainments. Religious instruction.
Meals, free time, extra detail. (6 hours 15 minutes.)	{ Other nights.
Sleep. (9 hours.)	

Industrial work for this division is prevocational, except for those who are old enough and who know what occupation they wish to and should follow. These pupils may enter the regular industrial classes of the vocational division.

VOCATIONAL DIVISION.

BOARDING SCHOOLS.

The time assigned to a subject indicates its relative importance.

First Year:

General Exercises. (25 minutes.)	{ Assembly, once each week. Music, once each week. Current events, once each week. Penmanship, once each week. Civics, once each week.
English. (60 minutes.)	{ Reading. (25 minutes.) { Classics. Health. History. Grammar. (20 minutes.) { Mechanics of language. Composition. Spelling. (15 minutes)
Vocational Arithmetic. (40 minutes.)	
Industrial Geography and Agricultural Botany (30 minutes.)	
Breathing Exercises. (10 minutes.)	
Industrial Work. (4 hours.)	{ Drafting, 2 hours per week. Instruction, 1½ hours per week. Application, 20½ hours per week.
Physical Training. (60 minutes.)	{ Competitive group games, two or three lessons per week. Military and gymnastic drills, two or three lessons per week.
Study. (60 minutes.)	
Meals, free time, extra detail. (6 hours 15 minutes.)	
Sleep. (9 hours.)	

Second Year:

		{ Assembly, once each week.
General Exercises.....	{	Music, once each week.
(25 minutes.)	{	Current events, once each week.
	{	Civics, once each week.
	{	Penmanship, once each week.
		{ Business papers, first term.
		{ Classics.
	{	General agriculture.
	{	History, second term.
	{	Health.
English.....	{	Mechanics of language.
(60 minutes.)	{	Composition.
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Third Year:

General Exercises..... (25 minutes.)	{	Assembly, once each week.
		Music, once each week.
		Current events, once each week.
		Civics, once each week.
		Miscellaneous, once each week.
English..... (60 minutes.)	{	Reading.....{
		Classics.
		History of materials used in different vocations.
		Health.
		History.
	{	Written.
		Mechanics of language.
		Spelling.
		Grammar.
		Rhetoric.
Farm and Household Physics, and Chemistry (alternate). (70 minutes.)		

Breathing Exercises.
(10 minutes.)

Industrial Work..... { Drafting, 2 hours per week.
(4 hours.) { Instruction, 1½ hours per week.
 { Application, 20½ hours per week.

Physical Training..... { Competitive group games, two or three lessons per week.
(60 minutes.) { Military and gymnastic drills, two or three lessons per week.

Study.
(60 minutes.)

Meals, free time, extra detail.
(6 hours 15 minutes.)

Sleep.
(9 hours.)

Fourth Year:

General Exercises..... { Assembly, once each week.
(25 minutes.) { Music, once each week.
 { Current events, once each week.
 { Civics, once each week.
 { Miscellaneous, once each week.

English..... { Reading..... { Study materials—history
(45 minutes.) { of, supply, demand, where.
 { Classics.
 { History.
 { Health.
 { Written.
 { Mechanics of language.
 { Composition..... { Spelling.
 { Grammar.
 { Rhetoric.

Breathing Exercises.
(10 minutes.)

Rural Economics, and Insects and Insecticides (alternate).
(40 minutes.)

Field Crops and Plant Diseases (alternate).
(45 minutes.)

Industrial Work..... { Instruction, 1½ hours per week.
(4 hours.) { Application, 22½ hours per week.

Physical Training..... { Competitive group games (two or three lessons per week).
(60 minutes.) { Military and gymnastics drills (two or three lessons per week).

Study.
(60 minutes.)

Meals, free time, extra detail.
(6 hours 15 minutes.)

Sleep.
(9 hours.)

COURSE OF STUDY.

PRIMARY AND PREVOCATIONAL DIVISIONS.

"Power to understand rightly and use critically the mother tongue is the flower of all education."—Charles Elliot.

"The farm, best home of the family; main source of national wealth; foundation of civilized society."—Inscription above the main entrance to the Union Station, Washington, D. C.

ENGLISH.

From primitive times reading, writing, and arithmetic have formed the foundation of education. Reading is placed first, then writing, these two being, in a sense, the precursors of the science of numbers.

The need to teach to read created the need for schools. The first schools were reading schools and the school has never gotten away from that primitive need. Reading, therefore, is the most important study of the elementary school; it is the key that unlocks the door to the other studies.

If one is to be guided by wisdom of the ages, the seers, poets, and the great men of action long since dead, then must recourse be had to the written word. The past deeds and experiences of the world are thus added to the reader's and the records of history immeasurably broaden the otherwise narrow horizon of individual life.

Reading should not only confer knowledge but it should also stimulate the processes of thought and imagination, so that they widely increase the power to create, to give, and to receive thought. Its purely mechanical side should never be permitted to obscure the broader and worthier functions of reading.

The make-believe phase of the imagination of childhood is one of its most characteristic and charming qualities. Through this the child may easily be led to "play it is so" and thus to enter into dramatization with all of the freedom and much of the ease of that spirit.

It has been quite definitely estimated that the white child at the age of 6 years is able to use from five to six hundred words as a speaking vocabulary, and that he understands from two to three thousand

words as a hearing vocabulary. He undoubtedly has learned more language than he will again learn in the same length of time.

The Indian child frequently comes under our care with a similar large store of information, but in a different tongue from English, and it is our duty to get him to think of and speak of his accumulated knowledge in English. At first it may seem that the Indian child on entering school is thus badly handicapped, but the chief handicap is merely the lack of a knowledge of English, and this is partly overcome by the patience of Indian children and the ease with which they may be interested in acquiring a new vocabulary.

It is a well-recognized fact that the first impressions that a child receives are strong and lasting, and it is almost impossible to get rid in after life of wrong or undesirable early impressions. By repetition the child learns words and sentences as he hears them, and correct habits of expression, like those of dress and manners, are best acquired from example, imitation, and association. Books on grammar or on etiquette can seldom accomplish what breeding, taste, and association have not done. The only way to teach a pupil good English is to surround him with its correct usage. The Indian child, like any other child, will form good habits or bad habits of speech, according to his atmosphere as well as his instruction. In this larger sense all persons who associate to any extent with Indian children are the instructors of such Indian children in English, and it is important that all employees at Indian schools strive to have this association beneficent rather than otherwise.

The best teaching of Indian pupils to form an English-speaking vocabulary must follow the fundamental law of mental action, which is well illustrated by the first words that a mother teaches her child, as "mamma," "papa," "spoon," etc. In teaching the word "spoon" the mother places the spoon in the child's hand and says "spoon." The child sees, feels, and hears the name of the object simultaneously. By repetition of these experiences the idea becomes fixed, and afterwards the child is able to recall the image by any one of the above sensations. The next step is to teach the child to recognize the written or printed name of the object by associating the written or printed name with the real object, which is the beginning of teaching the child to read. Action words may be taught in the same way; that is, by performing the act and naming it at the same time. By this method the child is taught to think, to speak, to read, and to write in English.

The great stress during the Indian child's first few years in school must be placed on giving him a good speaking vocabulary in English. The greatest factor in obtaining such a vocabulary is interest, for the mind always sets to work upon the thing in which it is interested.

Some children are eye-minded, some ear-minded, some muscular-minded, and still others are vocal-minded. The more factors called into play in the mastery of a word, the more quickly will that word be learned.

One of the principal aims in education is to have the child acquire useful habits and to create in him a desire to follow these habits after the so-called "school days" are over. The following are a few of the many valuable habits that the child should form in reading:

- (a) Though getting.
- (b) Thought giving and good expression in oral reading.
- (c) Selecting the best reading material.
- (d) Desire to read for profit and pleasure.
- (e) Love for and enjoyment of the world's best literature.

Characteristics of good stories for children:

- Few characters.
- Simple plot.
- Rapid action.
- Good climax.
- Suitable vocabulary.
- Repetition.
- Rhythm.
- Rich in imagery.
- Good moral.
- True to life.

Does it touch the heart of the child by appealing to his imagination, by arousing his emotions, by suggesting and reviving his own experiences?

Does it penetrate his world of make-believe by making those things which are not alive become alive, active, and do things?

Does it deal with everyday objects of the everyday world?

Does it treat of his objects of fancy; i. e., personifying plants, flowers, trees, buildings, stumps, sticks, stones, sun, moon, stars, water, fire, etc.?

Is the story the result of a certain line of work; is it the beginning of a definite plan of work, or is it appropriate to the seasonable climatic conditions or the principal thought of the day.

Teachers should keep the following aim in reading constantly before them: *In the shortest time possible to develop in the pupil the power to get the thought and feeling of the writer and, if called on to do so, to convey them to any audience in an intelligent manner.*

Teachers should become familiar with and enjoy a selection before they attempt to teach it.

Bring out the thought by asking questions beginning with when, who, how, what, where.

Master a definite method of teaching reading in and above the third grade, as well as below this grade.

Interest pupils in home reading, and judiciously guide them in their selection of good books.

Create a love for good literature.

Encourage pupils to read for pleasure and for profit.

Teach pupils how to determine whether a story is or is not good.

Pupils should be required to answer all questions in complete sentences when English is the prime object of the exercise.

Teachers should make a careful study of the method of teaching and telling stories to children.

Have a definite plan for teaching picture-study lessons. Do not ramble.

To get originality and individuality in English the teacher should keep his hands off and his tongue tied while each pupil tells his own seeing, feeling, imagining, and thinking, though the teacher may later trim the flame which he has caused by kindling the fire with live coals.

Pupils should be given both oral and written spelling as each has its particular value.

Have a definite plan to develop industrial vocabularies.

Keep complete lists of the different words taught in first, second, and third grades.

Be sure you add at least two new words a day to the child's vocabulary. Keep a list of the new words.

Poor spelling is one of the greatest reproaches of present-day American schools. It has therefore been necessary of late to devote special attention in most schools to this fundamental work, even in high schools, colleges, and universities. This should sufficiently attest the need for some special attention here.

Spelling can be made interesting. Motive can be given to the spelling lessons when the child wants to tell something in written form, but can not until he first learns how to spell and write the words.

Interest should be aroused in the spelling of the names of common things by gathering them around some known center; the members of the family must be clothed and fed, so the child may learn to spell the things a little child wears or eats.

In one week may be used the names of things found in the kitchen; in another week those in the dining room; and still another the things in the living room, etc., until the whole house, the grounds, the barn, and the daily activities have become points of interest around which words are clustered.

To add still more interest, these different groups of words may be gathered together into booklets; an even stronger appeal is made if pictures are added.

The day's lesson for the primary grades should not be long. It may have 10 words, but 6 of the 10 words are review words; two more should not present difficulties, leaving only two requiring study.

If spelling books for written spelling are used the following plan may be of use:

Instead of crossing or erasing the misspelled words, colored "spelling stickers" are quickly placed over them, then the correct form of the word is written on the face of the sticker. This keeps a neat book; it also shows at a glance which words were misspelled and need careful study, and, best of all, it keeps before the child only correct form.

The aim has been to make this course represent minimum rather than maximum requirements. This leaves abundant room for the employment of resource and ingenuity upon the part of the teacher to enrich and amplify the central thought.

A great deal of the development of mechanics of language is to be taught with oral exercises, but not more than two written language lessons per week should be given.

The experience and observation in pupil gardens will afford much familiar basic material for use in connection with language work.

The teacher should develop memory material, memory gems, etc., in addition to those hereafter suggested.

FIRST GRADE.

Almost all of the English work for the first grade should be conversational and other oral exercises and reading.

I. Conversational and Other Oral Exercises.

(a) The personal experience and observation of the child should be the basis of conversational exercise. The teacher may arouse much interest by asking questions and requesting observations about plants, animals, birds, insects, the care of the pupil's own body, climatic conditions, seasons, and about gardening, farming, and different industrial activities of the home, school, and community, especially these last.

(b) Conversation lessons based on pictures.

(c) Reproduction of stories read by the pupils in their books and stories told by the teacher.

(d) Dramatization of stories told or read.

II. Reading and Written Exercises.

(a) Teach new words by object method, action method, and teach new words in sentences by the combination of both methods.

(b) After the pupils have been taught to speak the words, show the words in their written form on the blackboard and on pieces of cardboard. (Make and use drill cards.)

(c) Read from the blackboard sentences used in conversation between the teacher and pupils. These sentences should be written by the teacher.

(d) Read from strips of cardboard the same and similar sentences.

(e) Continue making sentences from words taught, reading them from blackboard and cardboard.

(f) Read from cardboard and the blackboard sentences taken from the first pages of the first book to be used.

(g) Supplement readings from cardboard with sentences arising from the various school activities.

(h) Copy sentences from the blackboard the latter part of the year.

(i) Complete the basic primer and a supplementary primer.

(j) Complete the essential parts of a good number primer.

(k) Complete the basic first reader.

(l) Boys and girls love rhythm: have them recite from memory nursery rhymes and simple poems for rhythm, articulation, enunciation, and good expression, such as "Mother Goose" and other common rhymes.

(m) Drill on initial and final consonants.

(n) Teach the position of the tongue, lips, and the lower jaw in producing the different sounds, by having the pupils observe the teacher's mouth in producing the sound.

(o) Copy sentences from the blackboard composed by the children.

(p) Teach the use of capitals in writing their own names.

(q) Teach the use of capitals at the beginning of sentences.

(r) Teach the use of the period at the close of a sentence. (The use of capitals and the period should be taught incidentally in connection with their other work.)

(s) Each teacher should master some one definite method of teaching phonics and use phonograms to assist in developing the pupil's vocabulary.

(t) Teach the pupils to spell the words used in their lessons; do this during the last half of the first grade.

(u) In teaching a child to spell attention should be given to syllabication by having the pupils, in oral spelling, make a short pause between each syllable of a word. Dividing a word into syl-
la-

bles puts it in shape to be mastered part by part and greatly assists in enunciation and pronunciation.

(v) As phonic work is introduced it is necessary to learn the names of the letters. Have the alphabet written at the top of the blackboard or on slips of cardboard in large letters. Place these slips at the top of the blackboard. The children will be able in a very short time not only to name each individual letter, but they will be able to name them in their order.

(w) Teach use of "a" and "an" before vowels.

(x) Teach use of "is," "are," "was," and "were."

(y) Teach use of contractions and abbreviations found in the reader.

(z) Give drills in rapid recognition of words, short sentences, and phrases. (Avoid the pointing and hesitating habits in reading.)

III. Seat Work.

(a) Word building with letter cards.

(b) Sentence building with word cards.

(c) Copying lists of words beginning with the same letter.

(d) Picture puzzles.

(e) Stick laying.

(f) Block building.

(g) Copying and drawing what certain words and certain selected sentences say.

(h) Arranging the letters of the alphabet in their order.

(i) Arranging figures in their order to 50.

(j) Using small grains or seeds in forming letter and word building.

IV. How to Measure the Success of First-Grade Work in English.

(a) Has each pupil acquired a reading vocabulary from 250 to 500 different words?

(b) Has each pupil acquired a speaking and hearing vocabulary from 500 to 1,000 different words?

(c) Does the child recognize the words in the reading vocabulary readily, and is the child able to read short sentences without pointing to the different words or hesitating on account of not being able to grasp short sentences as a whole?

(d) Can the pupil copy words and easy sentences from the blackboard?

(e) Do pupils reply to question in short, complete sentences?

(f) Can the pupils write their own names?

NOTE.—Have I accomplished this work during the child's first year, or one and one-half years in school?

SECOND GRADE.

I. Conversation and Other Oral Exercises.

(a) Continue conversational lessons of first grade and broaden the field of subjects by giving more attention to observation nature-study lessons on plants, trees, animals, insects, etc., and to gardening, agriculture, home industries, health, manners, right conduct, kindness to one another and to animals, etc.

(b) Review some of the stories told in the first grade and continue work with pictures and stories. Stories of Columbus, Franklin, and Lincoln should be used in this work along with others.

(c) Give oral exercises to develop the imagination.

(d) Continue dramatization.

(e) Commit and recite easy poems and memory gems.

(f) Correct use of "there," "their," "has," "had," "have," "see," "saw," "seen," etc.

(g) Correct use of "this," "that," "these," and "those."

(h) Correct use of words, as "quickly," "slowly," etc.

(i) Use of "to," "too," and "two."

(j) Correct forms of pronouns after "is," "are," "was," and "were." Give special drills frequently, using dialogue form.

(k) Teach sentences illustrating use of "when," "where," "how," and "why."

II. Reading and Written Exercises.

(a) Continue script reading from slips of cardboard and blackboard.

(b) Read from supplementary first readers.

(c) Complete the basic second reader.

(d) Continue phonic drills to give skill in recognition and mastery of new words.

(e) Give drills in rapid recognition of words, phrases, and sentences, thus facilitating rapid silent reading and fluent oral reading. (Avoid the pointing and hesitating habits in reading.)

(f) Reading of written directions for work and study.

(g) Read sentences resulting from conversational lessons.

(h) Have pupils draw with pencil or crayon pictures which certain selected sentences suggest.

(i) Use sand board, if available, for picture formation, thus causing the children to get thought clearly through words in order to make the picture in sand.

(j) Have children play or act the different parts in their reading lessons.

(k) Give special attention to thought-getting in silent reading and to thought-giving in oral reading.

(l) Give a good working knowledge of phonics and continue word-building exercises from phonograms.

(m) Continue work in syllabication in spelling.

(n) Teach "long" and "short" sounds of vowels.

(o) Write words used in their lessons and from basic speller.

(p) Write easy sentences from dictation, using paper and pencil and blackboard.

(q) Continue work in abbreviations and contractions met with in their work.

(r) Compose and write simple sentences used in connection with work in school.

(s) Reproduce short stories in writing, for which pupils contributed sentences.

(t) Extend knowledge of use of capitals in beginning sentences, names of persons and places, first word of each line of poetry, names of the days of the week, months of the year, and initials.

(u) Teach the use of question mark and call attention to quotation marks when found in their lessons.

(v) Teach punctuation used with initials and abbreviations.

(w) Teach use of comma in a series of words.

III. Seat Work.

(a) Continue work of first year that has not lost its interest to the pupils.

(b) Arrange lists of words according to phonograms, as "dig," "pig," etc.; "man," "can," "fan," etc.

(c) Letter writing: Copy letters written on the blackboard, on cardboard, and those found in their books.

(d) Draw envelope from model, and copy the address upon it.

(e) Write answers to questions about their lessons which are written on the blackboard or on slips of cardboard.

(f) Write answers to questions found in their books.

(g) Draw map of schoolroom, school yard, and local section of country or village.

(h) Draw land and water forms, as island, cape, gulf, strait, etc.

IV. How to Measure the Success of Second-Grade Work in English.

(a) In the basic second reader can pupils read with some degree of readiness and fluency?

(b) Can they read new material of the same degree of easiness as basic reader, with a fair degree of readiness, after a few minutes silent reading?

(c) Are they forming correct habits in reading?

(d) Is their oral reading thought-giving?

(e) Are they making satisfactory progress in phonics?

- (f) Do they spell the words in common use in their work correctly?
- (g) Has syllabication given any assistance in clear pronunciation and helped the pupils to spell better?
- (h) Have pupils added to their store of memory work a number of select poems, memory gems, etc.?
- (i) Have they read any of the books in the library for second-grade pupils?
- (j) Can they copy sentences from the blackboard correctly?

THIRD GRADE.

I. Conversational and Other Oral Exercises.

- (a) Frequent review of stories told to and read by pupils in their previous work.
- (b) Longer stories from travel, history, and other stories, including Indian folk lore, which will inculcate truthfulness, honesty, industry, perseverance, clean thoughts, loyalty, politeness, cleanliness, good manners, etc.
- (c) Personal experiences and observations of the pupils.
- (d) Common forms of food and articles of clothing, how obtained.
- (e) Dramatization of stories, poems, lessons in health, manners, and right conduct.
- (f) Oral compositions in the form of topical recitation in reading and in other subjects.
- (g) Picture lessons to have pupils talk.
- (h) Farming, gardening, dairying, agriculture, sewing, cooking, shopwork, and other home industries.
- (i) The effect of seasonal changes in vegetation, animal life, home life, and life of the child.
- (j) The sky—appearance, sun, moon, stars, big dipper.
- (k) Distance and directions, modes of travel and transportation.
- (l) Forms of water, as clouds, fog, rain, hail, snow, frost, ice.
- (m) Running water, common land forms, kinds of soil, as rock, gravel, sand, clay, loam.

II. Reading.

- (a) Read suitable material from supplementary second readers.
- (b) Complete the basic third reader.
- (c) Select suitable supplementary reading material on nature, history, biography, geography, travel, legends, fairy stories, right conduct, etc. (All the geography and history instruction given to pupils in this grade should be in connection with their English work.)
- (d) Give special drill on a few of the choice selections found in the readers which bring out a variety of expressions.

(e) Continue work in phonics and in different sounds of the letters. During the latter half of the grade begin the teaching of diacritical marks.

(f) Special attention should be given in this grade to the formation of correct habits in reading. (See introduction.)

(g) Pupils should be requested to pass judgment on selections read as to which they like best and why.

1. Which paragraphs or stanzas seem the truest, and why.
2. What truth is worth remembering and in which stanza or paragraph is it given.
3. Which part seems to have the best rhythm.
4. Which stanza or paragraph seems to form the clearest mental picture.

(h) Select and read books from the school library.

(i) Assign carefully and definitely reading lessons to be prepared at seats, so that pupils will be anxious to study their lessons.

III. Spelling.

(a) From reading, language, and other lessons.

(b) From the basic speller.

(c) Oral spelling in connection with reading and other lessons.

(d) In oral spelling pause between the syllables.

(e) Write easy sentences from dictation.

(f) Use each word spelled in a complete sentence which reveals the meaning of the word.

(g) Teach the use of the apostrophe.

(h) Teach the pupils to spell and use the most common homonyms.

IV. Mechanics of Language and Written Exercises.

A large amount of the work of the development of the mechanics of language should be given with conversational and other oral exercises. Not more than two written lessons should be given each week.

(a) Review work of the first and second grades.

(b) With the aid of the pupils, work out series of related sentences from personal observations and experiences and from familiar stories. (Write these sentences on the blackboard, calling attention to spelling, capitals, punctuation, and have pupils copy them.)

(c) Later combine related sentences into paragraphs, and call attention to indentation of paragraphs in the different books.

(d) The use of apostrophe to show ownership.

(e) Continue drill work in fixing correct forms and use of words.

(f) Dictate exercises calling for use of capitals and punctuation taught.

(g) Use of comma in a series and in direct address.

(h) Extend list of abbreviations and contractions.

(i) Make a list and teach the use of the most common homonyms found in work and in the basic speller.

(j) To write a short letter of friendship, also a short business letter, and to address the envelopes correctly. (Consult a good primary language book.)

(k) Abbreviations for the days of the week, months of the year; also, St.—Street, Ave.—Avenue, Mr.—Mister, Prof.—Professor, Dr.—Doctor, Capt.—Captain.

(l) The common contractions in sentences.

(m) Use of period at close of statement and in abbreviations.

(n) Correct use of capitals, comma, period in writing dates and in letter writing. (Give special drills in this work.)

(o) Use of comma in direct address, and its use after "yes" and "no" in sentences answering questions.

(p) Use of quotation marks, and that the first word of a direct quotation should begin with a capital letter. Call attention to quotations and show that quotations are separated from the remainder of the sentence or sentences.

(q) I and O when standing alone should be capitals.

(r) Correct use of "see," "saw," "seen," "eat," "ate," "eaten," "go," "went," "gone," "sit," "sat," "drink," "drank," "drunk," etc.

(s) Correct use of "most," "almost," "then," and "than" in sentences.

(t) Words of opposite meaning.

(u) Write a list of words on the board that may be made to mean more than one thing when "s" is added. Have pupils write the words adding the "s" afterwards.

(v) Teach that sometimes we add "es" to make a word mean more than one.

(w) Give lists of words used and have them written and arranged in columns meaning (a) one and (b) more than one.

(x) Give drills in fixing correct forms of pronouns.

(y) Teach sentence, statement, and question.

V. Seat Work.

(a) Arrange lists of words alphabetically, first, according to the first letter; second, according to the first two letters, as preparation for use of the dictionary.

(b) Begin the use of the dictionary the latter half of this grade.

(c) Study of lessons.

(d) Assign regular period to do suitable library reading at their seats.

(e) The pupils should memorize suitable poems, memory gems, etc.

(f) Children write answers to questions given by the teacher that require the pupils to read and think carefully, as, What word pic-

ture do you find in the third paragraph? Do you think the persons in the story did right? Why?

(g) Copy sentences from blackboard, reader, and other books.

(h) Draw pictures suggested from certain selected sentences and paragraphs.

(i) Have pupils from their readers or other sources write 10 words that mean one, and 10 words that mean more than one.

(j) Draw map of schoolroom, school grounds, and local section of the country.

(k) Draw land and water forms, as island, cape, gulf, strait, etc.

VI. How to Measure the Success of Third-Grade Work in English.

(a) Do pupils read fluently and in a thought-giving manner after a little preparatory silent reading easy, new third-grade material?

(b) Are they forming correct habits in reading?

(c) Can they recite three or four poems learned during the past year?

(d) Have they read at least two books from the library which are suitable to their mental attainments?

(e) Do the pupils know what an alphabetical list is?

(f) Can they find words in a small dictionary?

(g) Do they syllabicate in oral spelling?

(h) Can the pupils name any of the selections read during the year; tell the author of the selection?

(i) Are they cultivating a love for good literature?

(j) Do they like to read good books from the library?

FOURTH GRADE.

A great deal more time should be spent on oral than on written English since people talk more than they write, and correct speech is universally recognized as a mark of an educated mind.

I. Conversational and Other Oral Exercises.

(a) Review stories, etc., used in the third grade.

(b) Teach stories from the lives of great men and about the most important events in history.

(c) Observations and personal experiences of the pupils. (Agriculture, health, nature study, home industries, industrial work, manners, right conduct, and competitive group games, etc.)

(d) Poems and choice memory gems; studied and recited from memory.

(e) Changing direct quotations to indirect, and vice versa, giving special attention to time expressed by the verbs and the choice of words.

- (f) Dramatization of the work of this grade.
- (g) Oral composition by topical recitations in geography, history, and other subjects.
- (h) Oral compositions by pupils on the industrial work in which each is engaged.
- (i) Oral spelling.
- (j) Local civics.
- (k) Frequent drills in the use of the most common irregular verbs and nouns.
- (l) Drills in the different uses of pronouns in sentences in the nominative and objective cases. (Use dialogue form.)

II. Reading.

- (a) Read as much of the suitable material from the basic reader for this grade as time permits.
- (b) Read stories from the lives of great men and women, and give special attention to those that have influenced the different periods of United States history.
- (c) Group historic events around the lives of these men and women taken up in chronological order. (All the history taught in this grade should be in connection with the English work.)
- (d) Select suitable reading material from different books for this grade according to timeliness of interest, rather than the arrangements of stories in the books; that is, read stories that apply to the particular seasons at hand or to the particular thought of the day, (See suggestive list on page 48).
- (e) Pupils should be taught to pass judgment on what they read with regard to truth, to beauty in thought and in choice of words, to rhythm, and to the purpose of the lesson.
- (f) Continue use of the dictionary. (The teacher should give this work special attention. See that pupils use the dictionary.)
- (g) Oral reading to the school or class, as an audience, of choice selections at least once each month by each pupil. (This can be done in connection with opening exercises and literary societies.)
- (h) Short, vigorous drills in the use of the organs of speech for articulation and pronunciation.
- (i) Reading material in dramatic form appeals to the children, and should be used extensively.
- (j) After arousing appreciation in choice of selections continue work of memorizing and reciting.
- (k) Encourage reading for pleasure of good literature adapted to interest and capability of pupils.
- (l) Give special attention to the forming of good habits in reading.

III. Spelling.

(a) Articulation and pronunciation drills. Continue work in phonograms and sounds of letters if not mastered in previous grades.

(b) Diacritical marks.

(c) Special drills in use of the dictionary.

(d) Dictation exercises giving attention to the use of capitals, apostrophe, and punctuation marks.

(e) Oral spelling from textbooks.

(f) Use a good spelling book, as the basic one, and master the portions suitable for this grade.

(g) Continue careful attention to syllabication. Have pupils mark the accented syllables.

(h) Have spelling matches, using words from the readers and other sources of the lower grades.

(i) Have both oral and written spelling.

IV. Mechanics of Language and Written Exercises.

A large amount of the work of the development of the mechanics of language should be given with conversational and other oral exercises. Not more than two written lessons should be given each week.

(a) Review work of previous grades immediately before continuing further work along the same line.

(b) Teach sentence; statement, question, command, exclamation, and how to punctuate each.

(c) Develop a paragraph and call attention to the indentation of paragraphs.

(d) Develop outline for short compositions.

(e) Written composition work should be extended and based on conversational and oral exercises.

(f) Write compositions, following oral lessons on industrial work in which each pupil is engaged.

(g) Work for and encourage originality, and do not require long compositions.

(h) Teach use of the hyphen at the end of a line in dividing a word.

(i) Use of capitals in titles and names of the Deity.

(j) Abbreviations for the different States.

(k) Review and give special drills to emphasize the correct use of punctuation marks, apostrophe, capital letters occurring in the different subjects.

(l) Reproduction of short stories used in conversation and in oral exercises.

(m) Dictation exercises in spelling.

(n) Write memory gems, poetry, etc., from memory.

(o) Teach pupils to write autobiography.

- (p) Continue letter writing and the addressing of envelopes.
- (q) Continue writing sentences using "me," "him and me," "you and me," "her and me," "us," "them and us."
- (r) Teach the correct use of "learn," "teach," "affect," "effect" in sentences; also the auxiliaries "shall," "will," "has," "have," "should," "could," and "would."
- (s) Teach present, past, and future time.
- (t) Teach the use of the following words in sentences in their proper meaning in the present, past, and future time: Learn, teach, drink, shake, come, choose, tear, know, take, lay, lie, love, like, etc.
- (u) Use correctly in sentences such words as "tall," "taller," "tallest," "good," "better," "best," "little," "less," "least"; also the comparison of "old," "pretty," "large," "sweet," "amusing," "young," "many," "far."
- (v) Teach the plurals of the most common words that are formed in an irregular way, as mouse, mice, louse, lice, man, men.
- (w) Begin the work of developing rules for the formation of plural forms of words. Make lists of words and arrange in groups, according to rule, then follow in forming their plurals.
- (x) Teach possessive singular and plural forms.
- (y) Use basic text.

V. Seat Work.

- (a) Study and prepare lessons for recitations in the different subjects.
- (b) Reading books from the library and current events in magazines and newspapers. (Have a definite time for this reading.)
- (c) Write the names of different animals and name the young of each, as cow—calf, cat—kitten, goose—gosling, etc.
- (d) Write names of different animals and the name of the opposite sex, as man—woman, niece—nephew, gander—goose, bull—cow; etc.

VI. How to Measure the Success of Fourth-Grade Work in English.

- (a) Apply tests for third grade.
- (b) Do pupils spell correctly most of the words taught them?
- (c) Have they read at least two books from the library?
- (d) Are pupils independent users of the dictionary?
- (e) Is the oral reading of the pupils entertaining and thought giving?
- (f) Have a number of selections been memorized? Can pupils quote readily a number of good memory gems?
- (g) Can they write a good business letter, as well as a friendship letter?

(h) Are they fairly familiar with the lives of men and women who have figured extensively in the development of our country?

(i) Have they a fair knowledge of the animal and plant life of the community?

(j) Can they talk intelligently about the industries taught at school and about those of the community?

FIFTH GRADE.

I. Conversational and Other Oral Exercises.

(a) Review work of previous grades.

(b) Continue conversational lessons on school, home, and community activities, as farming, gardening, stock raising, carpentry, printing, cooking, mending, sewing, laundering, games, shoe and harness repairing, etc.

(c) Description of birds, animals, persons, etc.

(d) Oral reproduction of stories from United States history and stories portraying thrift, industry, truth, self-reliance, self-support, personal independence, clean thoughts, good manners, good morals, etc.

(e) Topical recitations in reading, geography, health, library reading, and other school activities.

(f) Continue picture-study work.

(g) Continue memorizing choice selections and memory gems.

(h) Continue to have pupils tell personal experiences and observations.

(i) Report on library books read at school and at home.

(j) Have pupils tell what they have read in the newspapers and magazines.

(k) Change direct speech to indirect and vice versa, paying strict attention to the use of verbs and their tenses.

(l) Give drills for forming correct habits in pronouncing words commonly mispronounced, like "such," "catch," "just," "get," etc.

(m) Conversational lesson—the post office:

1. Principal duties of postmaster.
2. What must he do to the letter before it leaves his office?
3. The necessity for each envelope to have a postage stamp.
4. Duties of postman.
5. What happens when a letter is badly or incorrectly addressed?
6. Tell about rural delivery, parcel post, special delivery, free delivery, registered mail, money orders, postal savings bank.
7. Classes of mail and rates of postage.
8. Give the route of a letter from your post office to New York.

II. Reading.

- (a) Begin basic reader for the grade. Read as much of the suitable material as time permits.
- (b) Oral reading of specially prepared selections to the class.
- (c) Drills in articulation, accent, emphasis, and inflection.
- (d) Test the pupil's silent reading ability by having him give the thought derived therefrom.
- (e) Continue work in memorizing choice prose and poetry selections, as well as memory gems.
- (f) Encourage reading for pleasure as well as for profit.
- (g) Read dramatic selections and have pupils give a short play during the year.
- (h) See that pupils continue the use of the dictionary. Teach them how to find the different tenses of the verb.
- (i) Call attention to the different punctuation and other marks found in reading.
- (j) Have pupils pass judgment on what they read.
- (k) Devote about one-half of the time for reading to reading history. (All the instruction in history in this grade should be given in connection with reading.)

III. Spelling.

- (a) Continue articulation drills and syllabication.
- (b) Continue work in phonograms and sounds of letters if not mastered in former grades.
- (c) Continue drills in use of dictionary, giving necessary attention to diacritical marks.
- (d) Oral and written spelling from basic speller.
- (e) Lists of words from other subjects and school activities.
- (f) Dictation exercises.
- (g) Keep lists and give drills on words frequently misspelled.
- (h) Use in dictation exercise words often misspelled, homonyms, possessives, contractions, abbreviations, etc.
- (i) A few of the most common rules of spelling may be taught here.
- (j) Master that portion in the basic speller suitable for this grade.

IV. Mechanics of Language and Written Exercises.

A large amount of the work of the development of the mechanics of languages should be given with conversational and other oral exercises. Not more than two written lessons should be given each week.

- (a) The written work of this grade should be based largely on conversational and other oral exercises.

(b) Review work of previous grades immediately before taking up further work along the same line.

(c) Continue work in contractions.

(d) Use of hyphen in compound words.

(e) Use of apostrophe in contractions, to show possession or ownership.

(f) How to punctuate direct, indirect, and divided quotations.

(g) Review uses of capital letters.

(h) Continue the use of the dictionary.

(i) Short compositions based on the different activities of school and home life, personal experiences and observations, such as farming, gardening, stock raising, shoe and harness repairing, printing, cooking, mending, sewing, laundering, games, etc.

(j) Compositions based on study of pictures, especially those portraying industry.

(k) Give special attention to the forming of paragraphs.

(l) Aim for and encourage originality and freedom of expression in both oral and written exercises. The teacher should be satisfied with short compositions.

(m) Continue work in letter writing, giving special attention to headings, salutations, complimentary close, addressing envelopes, folding of letter for the envelope, and placing of the postage stamps.

(n) Give drills in dictation exercises which call for a large number of the common uses of the different punctuation marks and capital letters, also to emphasize correct uses of the pronoun and general rules for the formation of plurals.

(o) Have pupils change direct speech to indirect and vice versa. (Teachers should make a thorough study of this work to enable them to direct the pupils intelligently.)

(p) Give drills in the use of irregular verb forms and special attention to the use of the different forms of verb that give the most trouble, as "set," "sit," "be," "lie," "lay," "go," "get," "shall," "will," "may," "can," etc. (Illustrate the correct use of the different forms of these words in sentences.)

(q) Continue drill work in the uses of the different forms of those words which admit of comparison and those which change their forms to express number.

(r) Teach use of such words as "there," "their," "herd," "heard," "do," "dew," "due," "flower," "flour," "beet," "beat," "meat," "meet," "week," "weak," "deer," "dear," "wood," "would," "son," "sun," "feet," "feat," "steel," "steal," "our," "hour," "ate," "eight," "no," "know," "lye," "lie," "not," "knot," "nose," "knows," "sow," "sew," "so," "new," "knew," "right," "write," "rite," "rain," "rein," "reign," "sent," "cent," "scent," "fair."

"fare," "sea," "see," "o'er," "oar," "here," "hear," "hair," "hare," "stair," "stare," "by," "buy," "vale," "veil," etc.

(s) Give drills for the purpose of correcting common errors of speech heard on the school grounds, but avoid the use of incorrect forms of expressions.

(t) Use basic text.

V. Seat Work.

(a) Study and prepare lessons from the different recitations.

(b) Read books from library and current events in magazines, periodicals, and newspapers.

(c) Make extended lists of synonyms, homonyms, and use in sentences. (Consult the dictionary frequently for spelling and meaning of words.)

VI. How to Measure the Success of Fifth-Grade Work in English.

(a) Do pupils read readily and intelligibly from the readers they have been using?

(b) Can they read with a fair degree of readiness new material suitable for fifth grade, after a few minutes of silent preparation?

(c) Are pupils forming correct habits in reading?

(d) Can they recite from memory two or three choice selections learned during the year?

(e) Have they added to their stock of memory gems?

(f) Can they recite some of the selections learned in the previous grades?

(g) Have they read during the year at least two books from the library?

(h) Can they name a number of the selections read and give the authors of each?

(i) Can they give the principal lessons taught in a number of the selections read during the year?

(j) Can they spell orally and write correctly a majority of the common words used during the year?

SIXTH GRADE.

I. Conversational and Other Oral Exercises.

(a) Stories to be read or told by the teacher or one of the pupils and reproduced by the pupils. These stories may be selected from history (United States, English, and world).

(b) Oral composition on the industrial work pursued by the pupils. (It is not necessary that all recite on the same topic. Each should recite on the industrial work in which the pupil is engaged.)

(c) Topical recitations on the different subjects studied during the year.

(d) Oral reports on current events and on library books read in school and at home.

(e) Study and commit to memory choice poems and prose selections.

(f) Picture-study conversation, especially on pictures portraying industry.

(g) Dramatization.

(h) Talks on personal experiences and observations, such as farming, gardening, stock raising, shoe and harness repairing, printing, cooking, mending, sewing, laundering, play, games, etc.

II. Reading.

(a) Read as much of the suitable material in the basic reader as time permits.

(b) Read suitable articles from newspapers and magazines. (Assign special work in this line.)

(c) Read orally to the class some specially prepared selections.

(d) Have dramatic reading.

(e) Give special drills on articulation, accent, emphasis, and inflection.

(f) Teach incidentally the resources of the dictionary, such as:

(1) Where to find the names of noted persons and places in fiction.

(2) Pronouncing gazetteer.

(3) Biographical supplement.

(4) Pictorial illustrations.

(5) Additional words and definitions.

(6) Abbreviations and contractions.

(7) Signs in writing and printing.

(g) Teach what "n.," "v.," "v. t.," "v. i.," "adv.," "adj.," etc., mean when placed after a word in the dictionary.

III. Spelling.

(a) Review work of previous grades.

(b) Complete the appropriate work in the basic speller.

(c) Test pupils in their industrial vocabularies.

(d) Have oral and written spelling from the different subjects.

(e) Give dictation exercises bringing in the use of the words taught in the oral and written exercises.

(f) Have dictation exercises based on conversations and the mechanics of language, bringing in the different uses of capitals and punctuation marks.

(g) The teacher should keep lists of misspelled and mispronounced words that are common to the class and give drills in the use of these words until they are mastered.

(h) Have pupils keep individual lists, properly spelled, of misspelled and mispronounced words and have each drill on their own words.

(i) Some of the best rules for spelling may be introduced.

(j) Make lists of prefixes and suffixes and have contests to see who can make the most words out of three or four root words.

(k) Have spelling and pronunciation contests.

(l) Emphasize and give drills in articulation, accent, syllabication, and the correct use of words.

(m) Continue use of the dictionary.

IV. Mechanics of Language and Written Exercises.

A large amount of the work of the development of the mechanics of language should be given with conversational and other oral exercises. Not more than two written lessons should be given each week.

(a) Short compositions based on conversational and oral exercises, especially those on industrial activities.

(b) Reproduction of stories told and read.

(c) Original work suggested by experiences and observations.

(d) Have pupils write on topics suggested by themselves.

(e) Short compositions in connection with current events, history, civics, geography, hygiene, games, books, periodicals, and magazines.

(f) Story writing from pictures, especially those illustrating economic life.

(g) Prose selections and poems written from memory. Compare work with the original and correct errors in spelling, capitalization, and punctuation.

(h) Write a constitution for a society or club of any kind.

(i) Study and write telegraphic messages.

(j) Give special attention to the formation of paragraphs, margins, and indentations.

(k) Pay strict attention to accuracy, clearness, and completeness of expression.

(l) Use in sentences, also in dialogue form: "He and I," "she and I," "you and I," "you and me," "him and me," "her and me," and "them and me."

(m) Teach in sentences the correct use of: "Who," "whom," "awfully," "terribly," "fearfully," "either—or," "neither—nor," "except," "accept," "effect," "affect," "advice," "advise," "any," "anyone," "no," "none," "no one," "each," "every," "each other," "one another."

(n) Illustrate and drill on the correct use of "in," "into," "on," "upon," "between," "among," "to," "at," "of," "off," "by," "with," "till," and "until."

(o) Use correctly in sentences: About, across, after, against, above, along, around, before, behind, below, beneath, beside, down, during, for, from, over, through, toward, under, and up.

(p) Review and continue the correct use of "lie," "lay," "laid," "went," "gone," "saw," "seen," "eat," "ate," "run," "ran," "set," "sit," "sat," "bit," "bitten," "may," "can," "shall," "will," "should," "could," and "would."

(q) Continue drills to fix habits in the correct use of irregular verbs, pronouns, adjectives, adverbs, and prepositions.

(r) Letter writing—observe carefully the use of the stamp, headings, salutations, closing phrases, envelope, addressing envelope, folding letter for the envelope.

(s) Write business letters, friendship letters, applications, telegrams, invitations, acceptance, regrets, etc.

(t) Review uses of: Capital letters, punctuation marks.

(u) Use basic text.

V. Seat Work.

(a) Study English lessons and other lessons.

(b) Make lists of adjectives, give the comparison and use in sentences.

(c) Make lists of nouns that form their plurals in different ways, arrange in groups, and write the plurals.

(d) Make lists of homonyms and synonyms.

(e) Make lists of words denoting sex, write the opposite sex, also the names of their little ones.

(f) Make lists of words frequently misused and use correctly in sentences.

(g) Contests in using prefixes and suffixes in making words from a few well-selected root words.

(h) Have pupils write letters, invitations, etc.

VI. How to Measure the Success of Work in Sixth-Grade English.

(a) Can pupils read new material suitable for this grade after a few moments of preparation with a fair degree of fluency and thought giving?

(b) Can they read fluently, using right breathing, right pronunciation, clear enunciation, and correct articulation, the selections they have studied during the year?

(c) Are the pupils able to recite from memory three or four good poems or other selections of real value learned during the year?

(d) Have they added to their stock of memory gems and quotations?

- (e) Have pupils acquired a knowledge of the resources of the dictionary and are they in the habit of using them?
- (f) Have pupils read this year at least two books from the library?
- (g) Do they read newspapers and magazines?
- (h) Do they enjoy reading?
- (i) Have they become acquainted with some good literature, and do they indicate a preference for it?
- (j) Do pupils spell correctly the words in their written work?
- (k) Are the pupils able to write good business letters, letters of friendship, invitations, acceptances, regrets, etc.?
- (l) Are the pupils able to direct persons inquiring their way?
- (m) Have the pupils secured a sufficient command of English to be able to express themselves with fluency and facility?

SUPPLEMENTARY SUGGESTIVE MATERIAL.

Most of the suggestive material may be found in the readers or library books in the schools.

FIRST GRADE.

Stories to be read or told to the children :

- Little Red Hen and The Grain of Wheat.
- Three Bears.
- The Discontented Pine Tree.
- Tommy Tinkers' Charm String and other stories from The Mother Goose Village, Bigham.
- Gingerbread Boy.
- Shoemaker and Elves in Stories to Tell, Bryant.
- Cinderella, Grimm.
- Three Pigs, in How to Tell Stories, Bryant.
- Three Goats.
- Ugly Duckling, Anderson.
- The Old Woman and Her Pig.
- Henny Penny.
- Town Musicians.
- How the Robin's Breast Became Red.
- Little Black Sambo, Bannerman.
- Peter Rabbit, Beatrix Potter.
- The Pig Brother, Richards.
- Story of Seed, Dowry, Von Rydingsvard.
- Mrs. Grasshopper Gay, Bigham.
- Epaminondas, How to Tell Stories, Bryant.
- Raggizlug, How to Tell Stories, Bryant.
- Pot of Gold, Wilkins.
- Squirrels' Harvest.
- Giant and the Fairy.
- Birds' Concert.

Stories to be read or told to the children—Continued.

The Night Before Christmas, Moore.

A Lesson of Mercy, Alice Cary.

I Like Little Pussy, Jane Taylor.

Three Bugs in a Basket, Alice Cary.

Fables:

Hare and the Tortoise.

The Lion and the Mouse.

Country Mouse and City Mouse.

Dog and His Shadow.

Lark and the Farmer.

Wolf, Wolf, in Animal Stories.

Clytie.

Little Miss Apple.

Three Bears.

Mother Goose rhymes:

Baa! Baa! Black Sheep!

Little Bo-Peep.

Little Jack Horner.

Humpty Dumpty.

Mistress Mary.

Little Boy Blue.

This Little Pig Went to Market.

Dickery, Dickery, Dock.

I Have a Little Sister.

Peter Piper.

Peter, Peter, Pumpkin Eater.

Little Nancy Etticoat.

Jack Be Nimble.

Old Mother Hubbard.

Hi Diddle Diddle.

The House that Jack Built.

Sing a Song of Sixpence.

There was an Old Woman Who Lived in a Shoe.

In explanation of holidays:

Story of First Thanksgiving.

Story of the Christ Child.

Fairy New Year's Gift, in Child World.

Saint Valentine's Birthday, Plan Book.

Washington's Birthday.

Stories of the Flag, from Child Garden.

Poems to be memorized:

The Rain, Stevenson.

Time to Rise.

The Swing.

The Cow.

Little Birdie, Tennyson.

At Eastertime.

Songs of the Tree Top and Meadow, Mother Goose Rhymes.

SECOND GRADE.

Poems:

The Rock a By Lady, Field.
 Wynken, Blynken and Nod, Field.
 Little Boy Blue, Field.
 The Night Wind, Field.
 Windy Nights, Stevenson.
 The Land of Story Books, Stevenson.
 Bed in Summer, Stevenson.
 The Land of Counterpane, Stevenson.
 September, Helen Hunt Jackson.
 October, Helen Hunt Jackson.
 How the Leaves Came Down, Susan Coolidge.
 All Things Bright and Beautiful, Miss C. F. Alexander.
 The Sugar Plum Tree, Field.
 The Cooky Moon, Edmund Vance Cook.
 The Rainbow Fairies, Lizzie M. Hadley.
 Who Stole the Bird's Nest? Lydia Maria Child.
 The Swing, Stevenson.
 My Shadow, Stevenson.
 Don't Kill the Birds, Daniel A. Colesworthy.
 Thanksgiving Day, Lydia Maria Child.
 If I Knew, Maud Wyman.
 Song of the Wind, Helen M. Beckwith.
 We Thank Thee, Margaret Sangster.
 God Takes Care, Anon.
 The Two Squirrels, Anon.
 The Song of the Thrush, Lucy Larcom.
 The Bluebird, Mrs. Emily Huntington Miller.
 All Happy in Spring, Anon.
 Who Likes the Rain? Anon.
 A Busy Day, Anon.

THIRD GRADE.

Poems:

The Wind, Stevenson.
 A Visit from St. Nicholas, Clement C. Moore.
 Hiawatha's Friends, Longfellow.
 Seed, in McMurry & Cook's Song of Tree Top.
 Good-Night, Victor Hugo.
 The Wonderful World, William Brighty Rands.
 Sweet and Low, Tennyson.
 Daisies, Sherman.
 Marjorie's Almanac, Thomas Bailey Aldrich.
 America.
 Hiawatha's Childhood, Longfellow.
 Hiawatha's Sailing, Longfellow.
 Seven Times One, Jean Ingelow.
 Four Leaf Clover, Mrs. Ella Higginson.
 The Year's at the Spring, from "Pippa Passes," Browning.
 Pied Piper of Hamelin, Browning.
 I Live for Those Who Love Me, G. Linnalus Banks.
 The Brown Thrush, Lucy Larcom.
 Wishing, William Allingham.

FOURTH GRADE.

Poems:

The Gladness of Nature, Bryant.
 The Night Wind, Field.
 The Mountain and the Squirrel, Emerson.
 The Village Blacksmith, Longfellow.
 A Fable, Emerson.
 The Barefoot Boy, Whittier.
 The Fountain, Lowell.
 September, Helen Hunt Jackson.
 June Days (part in Language through Nature, Literature and Art),
 Lowell.
 Four-leaf Clover, Ella Higginson.
 Little Sandpiper and I, Cella Thaxter.
 A Child's Thought of God, Elizabeth B. Browning.
 The Brook, Tennyson.
 The Children's Hour, Longfellow.
 The Wreck of the Hesperus, Longfellow.
 Jack Frost, Hannah Gould.
 Robert of Lincoln, Bryant.
 "He Prayeth Best," Coleridge.

FIFTH GRADE.

Poems:

Ring Out, Wild Bells, Tennyson.
 Landing of the Pilgrims, Hemans.
 Each in His Own Tongue, Carruth.
 Evening at the Farm, Trowbridge.
 The Planting of the Apple Tree, Bryant.
 Aladdin, Lowell.
 The World Wants Men, Anon.
 To-Day, Carlyle.
 Barbara Frietchie, Whittier.
 Psalm of Life, Longfellow.
 Love of Country, Scott.
 Old Ironsides, Holmes.
 Rainy Day, Longfellow.
 Excelsior, Longfellow.
 The Arrow and the Song, Longfellow.
 The Day is Done, Longfellow.
 A Sea Dirge, Shakespeare.
 The Gladness of Nature, Bryant.
 Woodman, Spare That Tree, George P. Morris.
 Driving Home the Cows, Osgood.

SIXTH GRADE.

Poems:

Selections from Snowbound, Whittier.
It's Not Raining Rain to Me, Robert Loveman.
St. Christopher, Howells.
The Creation of the Birds.
The Builders, Longfellow.
One by One, Adelaide Proctor.
The Blue and the Gray, F. M. Finch.
The White-footed Deer, Bryant.
Lead Kindly Light, Newman.
Order for a Picture, Alice Cary.
Daffodils, Wordsworth.
The Flag Goes By, Bennett.
Paul Revere's Ride, Longfellow.
A Man's A Man, for a' That, Burns.
Abou Ben Adhem, Leigh Hunt.
Sheridan's Ride, T. Buchanan Read.
The First Snowfall, Lowell.
Nobility, Alice Cary.
Song of Marlon's Men, Bryant.

Proverbs:

A stitch in time saves nine.
A rolling stone gathers no moss.
Where there is a will there is a way.
If a man cheats me once, shame on him; if he cheats me twice, shame on me.
Follow the river and you will be to the sea.
All that glitters is not gold.
Make hay while the sun shines.
Half a loaf is better than no bread.
Practice makes perfect.
You can not eat your cake and keep it.
Waste not, want not.
You must run to win the race.
The more haste the less speed.
A penny saved is a penny earned.
Cut your coat according to your cloth.
If at first you don't succeed, try, try again.
Think before you speak.
Look before you leap.
Never put off until tomorrow what can be done to-day.
Never trouble another for what you can do yourself.
Never spend your money before you have earned it.
Never buy what you don't want because it is cheap.
Take things always by the smooth handle.
When angry count 10 before you speak; if very angry, count a hundred.

MEMORY GEMS.

The following is only a suggestive list of memory gems. The list is given for two reasons: (1) It may provide occasional material of this nature for those who may not have it at hand, or (2) it may stimulate thought along parallel lines and lead to the use of even better illustrative material.

It is a very good thing to have the child regularly acquire memory gems, thus, perhaps unconsciously, acquiring inspiration, ideals, and ideas that may go with him through his entire lifetime thereafter.

Heroism is simple, and yet it is rare. Every one who does the best he can is a hero.—Josh Billings.

He who has learned to obey will know how to command.—Solon.

The year's at the spring,
And day's at the morn;
Morning's at seven;
The hillside's dew-pearled;
The lark's on the wing;
The snail's on the thorn;
God's in His heaven—
All's well with the world.
—Robert Browning.

Boughs are daily rifled
By the gusty thieves,
And the book of Nature
Getteth short of leaves.
—Thomas Hood.

'Tis easy enough to be pleasant
When life flows along like a song,
But the man worth while is the man who will smile
When everything goes dead wrong.
—Ella Wheeler Wilcox.

There is the national flag! He must be cold indeed who can look upon its folds rippling in the breeze without pride of country * * *. White is for purity, red for valor, blue for justice, and all together—bunting, stripes, stars, and colors blazing in the sky—make the flag of our country to be cherished by all our hearts, to be upheld by all our hands.—Charles Sumner.

If I were a cobbler, I would make it my pride
The best of all cobblers to be;
If I were a tinker, no tinker besides
Should mend an old kettle like me.

If "ifs" and "ands"
Were old tin cans
They'd be of no use to tinkers.

Work for some good, be it ever so slowly;
Cherish some flower, be it ever so lowly;
Labor, all labor, is noble and holy.

—Mrs. F. S. Osgood.

There are as many pleasant things,
 As many pleasant tones,
 For those who dwell by cottage hearths
 As those who sit on thrones.

—Phoebe Cary.

Just a little every day;
 That's the way
 Children learn to read and write,
 Bit by bit and mite by mite.
 Never anyone, I say,
 Leaps to knowledge and its power.
 Slowly, slowly—hour by hour—
 That's the way;
 Just a little every day.

—Ella Wheeler Wilcox.

If you're told to do a thing,
 And mean to do it really,
 Never let it be by halves;
 Do it fully, freely.

—Phoebe Cary.

Great works are performed, not by strength but by perseverance.—Samuel Johnson.

The heights by great men reached and kept
 Were not attained by sudden flight;
 But they, while their companions slept,
 Were toiling upward through the night.

—Longfellow.

Oh, many a shaft at random sent
 Finds mark the archer little meant;
 And many a word at random spoken
 May soothe or wound a heart that's broken.

—Scott.

Hearts, like doors, will ope with ease
 To very, very little keys;
 And don't forget that two are these:
 "I thank you, sir," and "If you please."

Knowledge is proud that he has learned so much;
 Wisdom is humble that he knows no more.

—Cowper.

Boys flying kites haul in their white-winged birds;
 You can't do that way when your're flying words.
 "Careful with fire" is good advice, we know;
 "Careful with words" is ten times doubly so.
 Thoughts unexpressed may sometimes fall back dead;
 But God Himself can't kill them when they're said.

—Will Carleton.

It is hard to fail, but it is worse never to have tried to succeed.—Theodore Roosevelt.

Laugh and the world laughs with you;
Weep and you weep alone;
For this brave old earth must borrow its mirth;
It has trouble enough of its own.

—Ella Wheeler Wilcox.

There are no fragments so precious as those of time, and none so heedlessly lost by people who can not make a moment, and yet can waste years.—Montgomery.

The height of my ambition is only to find my place, though it were but a sweeper of chimneys.—Charles Kingsley.

Four things a man must learn to do,
If he would make his calling true—
To think without confusion clearly,
To love his fellow men sincerely,
To act from honest motives purely,
To trust in God and heaven securely.

—Henry Van Dyke.

I would be true, for there are those who trust me;
I would be pure, for there are those who care;
I would be strong, for there is much to suffer;
I would be brave, for there is much to dare.

I would be friend of all—the foe—the friendless;
I would be giving and forget the gift;
I would be humble, for I know my weakness;
I would look up, and laugh, and love, and lift.

Dare to be true; nothing can need a lie;
A fault which needs it most grows two thereby.

—George Herbert.

Not what we give, but what we share,
For the gift without the giver is bare;
Who gives himself with his alms feeds three—
Himself, his hungering neighbor, and me.

—Lowell.

He that can not think is a fool; he that will not think is a bigot; he that ~~can~~ not is a slave.—Carnegie.

My son, observe the postage stamp! Its usefulness depends upon its ability to stick to one thing until it gets there.—Josh Billings.

But whatever you are, be true, boys!
Be visible through and through boys!
Leave to others the shamming,
The cheating and palming,
In fun and in earnest, be true, boys.

—Mackay.

There is always hope in a man that actually and earnestly works. In idleness alone is there perpetual despair.—Carlyle.

You can not dream yourself into a character; you must forge one.—Carter.

Men and things are valuable only as they are serviceable.

We want no kings but kings of toil—
No crowns but crowns of deeds;
Not royal birth, but sterling worth,
Must mark the man who leads.

—Ella Wheeler Wilcox.

In the lexicon of youth which fate reserves for a bright manhood there is no such word as fail.—Lytton.

Every man must educate himself. His books and teacher are but helps; the work is his.—Webster.

Character is what God and the angels know of us; reputation is what men and women think of us.—Horace Mann.

Be noble! And the nobleness that lies
In other men, sleeping, but never dead,
Will rise in majesty to meet thine own.

—Lowell.

To be polite is to do and say
The kindest things in the kindest way.

The fisher who draws in his net too soon
Won't have any fish to sell;
The child who shuts up his book too soon
Won't learn any lessons well.

A thing is worth precisely what it can do for you, not what you choose to pay for it.—Ruskin.

Everything comes to him who waits—and hustles while he waits.

A man of words and not of deeds
Is like a garden full of weeds.

Plow deep while sluggards sleep
And you'll have corn to sell and keep.

—Franklin.

Lost, somewhere between sunrise and sunset, two golden hours, each set with sixty diamond minutes. No reward is offered, for they are lost forever.—Horace Mann.

So here hath been dawning
Another blue day.
Think! Wilt thou let it
Slip useless away?

Out of Eternity
This new day is born;
Into Eternity
At night doth return.

Behold it beforehand
 No eye ever did;
 So soon it forever
 From all eyes is hid.

Here hath been dawning
 Another blue day.
 Think! Wilt thou let it
 Slip useless away?

—Carlyle.

A soft answer turneth away wrath; but grievous words stir up anger.—Solomon.

Good manners can not be put on at pleasure, like an outside coat, but must belong to us.

I shall pass this way but once. Any good thing, therefore, that I can do, or any kindness that I can show to any human being, let me do it now. Let me not defer it or neglect it, for I shall not pass this way again.—Gilpin.

Use dispatch. * * * Ask me for whatever you please, except time; that is the only thing which is beyond my power.—Napoleon.

Be a man!
 Bear thine own burden; never think to thrust
 Thy fate upon another.

—Robert Browning.

No fountain is so small but that heaven may be imaged in its bosom.—Hawthorne.

Cleanliness may be defined to be the emblem of purity of mind.—Addison.

One flag, one land,
 One heart, one hand,
 One nation evermore.

—Holmes.

Beware of little extravagances; a small leak may sink a big ship.—Franklin.

If you are idle you are on the road to ruin, and there are few stopping places upon it.—Henry Ward Beecher.

Learn something beautiful, see something beautiful, do something beautiful each day of your life.—Alice Freeman Palmer's Three Rules of Happiness.

It is well to think well; it is divine to act well.—Horace Mann.

Who shoots at the mid-day sun, though he be sure he shall never hit the mark, yet as sure he is he shall shoot higher than he who aims at a bush.—Sir Philip Sidney.

The man who has not anything to boast of but his illustrious ancestors is like a potato—the only good belonging to him is underground.—Sir Thomas Overbury.

A man should never be ashamed to own he has been in the wrong, which is but saying in other words that he is wiser to-day than he was yesterday.—Alexander Pope.

Men love to hear of their power, but have an extreme disrelish to be told their duty.—Edmund Burke.

Bad company is like a nail driven into a post, which after the first or second blow may be drawn out with little difficulty; but being once driven up to the head, the pincers can not take hold to draw it out, but which can only be done by the destruction of the wood.—St. Augustine.

Education begins the gentleman; but reading, good company, and reflection must finish him.—John Locke.

If we work upon marble, it will perish; if we work upon brass, time will efface it; if we rear temples, they will crumble into dust; but if we work upon immortal minds, if we imbue them with principles, with the just fear of God and love of our fellow men, we engrave on those tablets something which will brighten to all eternity.—Daniel Webster.

He that can not forgive others breaks the bridge over which he must pass himself, for every man has need to be forgiven.—Lord Herbert.

Opportunity has hair in front, behind she is bald; if you seize her by the forelock you may hold her, but if suffered to escape not Jupiter himself can catch her again.—From the Latin.

PHYSIOLOGY AND HYGIENE.

FIRST, SECOND, AND THIRD GRADES.

The "health talks" herein given are intended to cover the lessons pertaining to care of the body, formation of correct habits of living, home sanitation, etc.; they should be given each year to all pupils in the three grades.

The work is to be given in connection with oral English, one lesson per week, and in day schools, where there is only one teacher for all the grades, it may be best to combine the three classes in these subjects, or at least to have only two classes for the three grades.

The outlines are not intended to be followed slavishly, and the talks need not even be given in the exact sequence in which they are here arranged, though it is believed that this sequence is natural and logical.

These lessons should be given with elaboration adapted to the intelligence of the pupils. The matters outlined are fundamental and can hardly be presented too often or too plainly and carefully.

Of course, repetition should not be allowed to become perfunctory and mechanical, but, given unflagging zest and interest on the part of the teacher, it will be found that children usually enjoy a lesson more, and profit more by it, after it has been given to them a few times than they do when it is first presented, just as if they are well told they usually prefer stories with which they are familiar to new ones.

In addition to the health talks, a few first-aid suggestions of a simple character are given. These are largely for the information of teachers, and no definite place is made for them in program of primary work; but it is believed that teachers will find opportunity to familiarize their more intelligent pupils, even in these grades, with such lessons. Many of them can be taught by drill in imaginary cases.

I. HEALTH TALKS.

The body.—A very wonderful machine. Important to keep it in good order. If it gets out of order we are sick and do not enjoy ourselves. If it is very badly out of order we can not work or play or go where we may want to nor enjoy life at all. If some parts of it get broken, such as arms or legs, we are crippled temporarily or permanently. If our eyes are injured or sore we are partly or wholly blind. If our ears get badly out of order they hurt us seriously and sometimes we become deaf, etc.

The health talks are going to teach us to take care of our bodies so that we may be strong and healthy and may enjoy life.

How to carry the body.—Correct ways of standing, walking, sitting, standing at attention, etc. Why these are important. Bad effects of getting round shoulders and habits of slouchiness in setting at desks and standing in recitations. We look better and feel better when we have our shoulders thrown back and are sitting or standing properly. Easy when we get used to it. Our bones and muscles then grow properly and our lungs get plenty of air. Have physical drills in connection with this lesson and occasionally refer to the lesson in connection with the regular calisthenics, etc., given daily.

Personal cleanliness.—Why we should keep our bodies clean. To keep ourselves healthy; to avoid being offensive to others. Mention clean hands and faces, teeth, finger nails, neck and ears, feet, clothing, etc. Why bathing is necessary and enjoyable. Different ways of bathing. Special effects of cold, hot, and tepid baths. Brief mention of functions of skin. Talk of soap, individual towels, individual basins, etc.

Habit.—Habit is a result of doing things several times. Very important. We will have several lessons about it. We all have many habits. Most of them we do not think of and hardly know that we have. They have a great deal to do with our health and happiness or sickness and unhappiness. They even affect our appearance and whether people like us or not. Refer to lesson 2. Habits are easy to form; hard to break. Youth the time to acquire good habits. Very hard for old people to change their habits. Boys and girls can if they want to and will try.

Some special health habits.—Personal cleanliness. Trying to keep surroundings clean. Breathing through nose. Eat moderately and chew food well. Don't put pencils, etc., in mouth. Don't rub eyes with dirty hands or dirty handkerchiefs. Don't spit on floors nor swallow sputum. Drink a good deal of pure water between meals. Sleep regularly. Don't stay up all night at dances, etc.

Mealtime habits.—Wash hands and face with soap and water and comb hair before eating.

Do not eat nor drink greedily nor noisily. Chew food well. Brush teeth.

Nature habits.—Habits the body forms to keep itself well. The body likes to have regular times for doing things, such as going to bed, getting up, eating, working, resting, playing, getting rid of wastes, etc. Such habits are of much importance, and we should consciously assist the body in forming them and not break into them except for quite important reasons.

This will be largely a repetition of matter given in other lessons, but functional habits are of so much importance that they may well be given emphasis in a lesson specially devoted to them.

Breathing.—Definition or explanation of breathing. Brief mention of lungs and explanation of their function. We are breathing all the time, mostly unconsciously. Ought always to be breathing good air. Air not good if we or others have used it before; very bad if it has been used over and over, as in unventilated bedrooms or any poorly ventilated rooms with people in them. Air not good if loaded with smoke or dust. House dust specially bad. Why? Should breathe through nose. Dangers of mouth breathing. See

doctor if it is hard for you to breathe through your nose. Periodical deep breathing very refreshing. Impossible to breathe well unless we keep our shoulders thrown back.

The breath.—Breath is air that has been in the lungs. Bad breath is disagreeable to those around us; makes them want to keep away from us. It indicates that something is wrong with us. Maybe our mouths are filthy. Our teeth may be decaying. Or our stomachs may be out of order, or our bowels may be clogged. Possibly we have diseased tonsils. If we know we have bad breath, and merely brushing our teeth carefully and washing our mouths thoroughly will not remedy the trouble, we should see a doctor or a dentist, or both. This will be a good lesson in which to emphasize the importance of oral hygiene and of good habits with reference to eating and drinking.

Ventilation.—Definition; different means of securing by windows, doors, pipes, fireplaces. Amount needed. How to ventilate by windows without causing harmful drafts.

Outdoor sleeping; how practiced; beneficial in certain wasting diseases and for the purpose of preventing such diseases.

Disease.—Nothing happens without a cause. When you are sick there is a cause; perhaps you have caught the disease from some one else. For a long time it has been known that many diseases could be gotten by one person from another; but until within a few years past it was not known just how they were carried. Now it is known that such diseases are caused by little things called germs. Germs are so small that we can not see them without using strong microscopes, which make them seem much larger than they really are. They look like little specks or dots, but are much smaller than any speck or dot you ever saw. Some are round; some are the shape of rods or cylinders, and some are curved or bent. Generally several are grouped together. Each of the diseases has its own germ, and the germ of a disease will cause a person to have the disease if he gets the germ into his body and the body is not strong enough to kill it. Germs get from one person to another. The best protection against them is good health, because well, strong people conquer and get rid of them better than weak, unhealthy people. Germs flourish in dirt and darkness. Sunshine and cleanliness kill them.

How germs enter the body.—Nearly all disease germs that enter the body do so through the mouth or nose or through wounds. They come from the bodies of other people, and are found in the waste and secretions. Filth helps to develop them, and people get them by getting little particles of the filth onto their hands or into the air they breathe or the food they eat, or in other ways. Insects carry them to persons. Biting insects get them directly into the blood. Others get them into food.

To prevent the spread of diseases, all wastes from the bodies of the sick should be destroyed.

Other important rules for protecting ourselves from diseases are to keep wounds very clean and protect them as doctors will show us how to; to be very careful about the food we eat, the water we drink, and the air we breathe; and to make war on dirt.

Spitting.—A filthy habit. Never spit on floors or walks; it may cause disease. It is bad manners to spit in the presence of others. On the part of well people, spitting and clearing the throat are largely

matters of habit. If you are well and keep your teeth clean and breathe through your nose, you will very seldom need to spit. If you are sick and must cough and spit, spit where the sputum can be destroyed by disinfectants or by burning. Never swallow such sputum. Beware of houses and even yards where sick people are careless about where they spit. They are dangerous.

Coughing and sneezing.—Fine particles of moisture may be coughed or sneezed into the faces of others and cause disease. The particles may be so small that the person does not feel them when they strike him, and yet they may contain many disease germs and be very dangerous. Besides it is bad manners to cough or sneeze in such position that particles of moisture can be so carried to other people. No matter where you are, if others are with you or if you are in a house in which people live, protect your mouth or nose with a handkerchief when you cough or sneeze. Be exceedingly particular to do this if at a table on which there is food, and also turn your head away from the table.

(Show pupils how to do this and have them practice the motions.)

Dust.—Definition. Source. Why irritating and harmful. May cause serious diseases. Tell how germs of disease get into it and then get into the air and are breathed, and into food and are eaten. Sprinkling—reasons for. Use of sweeping compounds. How to sweep dusty rooms. How to clean dusty furniture. Why dust should be washed off hands and face before eating. Mention dust to be found in dirty clothing and bedding; also in rugs, curtains, etc. Frequent airing, dusting, and washing advisable.

Call attention to particles of dust to be seen in a sunbeam.

The house fly.—One of the most dangerous enemies we have; filthy habits; carrier of disease; how it soils its feet and wings; kinds of diseases it spreads; its breeding places and how to destroy them; great importance of destroying them and of destroying the first flies of the season. Use of screens, poisons, traps, sticky fly papers, and swatters. All these important. Neighborhood work in the eliminating of breeding places necessary.

In season organize work on all these lines.

Mosquitoes.—Tell life history in simple language. Carriers of disease, especially malaria and yellow fever. Remedy for malaria. Prevention better than remedy. How to prevent. Breeding places of mosquitoes; how to destroy. Killing the young mosquitoes; killing grown-up mosquitoes; smudge fires; screens, etc.

Experiment: After explaining how mosquito larvæ come to surface of water to breathe, show how scum can be formed over quiet water by adding a little kerosene. (Pour a little water in a saucer or other container and add a few drops of kerosene. Mention effect on larvæ.)

Tell briefly how it was proved that mosquitoes carry yellow fever and malaria, and the story of the cleaning up of the Panama Canal Zone.

Body worms.—To have worms inside the body is filthy and unhealthful. There are five kinds of worms that are found in the intestines, namely, eelworms, pinworms, whipworms, tapeworms, and hookworms. The first three named are always worms of filth, and the presence of anyone of them is a sure sign that the person having it has eaten a worm egg that has passed through the body of another

person. The tapeworm is taken into the body by eating beef, pork, or fish not sufficiently cooked (dangerous to eat raw or half-cooked meat). Hookworms enter the body through the skin, usually the skin of the feet.

Tell all that it is important for the pupils to know about these various worms; also how to avoid getting them; and send them to physicians if they show any symptoms of having any of them.

The five senses.—Sight, hearing, touch, taste, smell.

Develop the lesson on these simply and inspirationally, by questions and conversation. Quite unconsciously the child has already acquired much information as to each of the special senses. Elicit and amplify it. Call attention to the immeasurable value of each to us and the importance of taking proper care of the organs of each sense.

The eye.—In the simplest possible language tell a little as to the structure of the eye and its surroundings—the bony cavity in which it is located; the eyeball, the pupil, the lid, the lashes. Explain functions of these briefly. Mention tears and explain function.

Emphasize extreme importance of taking the best possible care of the eyes; how to take care of them; how diseases of the eye are spread, etc. Importance of not straining them by overuse in poor light or light received from wrong direction. Teach how to remove small foreign bodies for self or others.

As an interesting experiment showing the effect of light on the pupil of eye, have one of the class stand before the others with eyes closed for a few moments and then suddenly open them. Have class watch the pupils of his eyes.

The ear.—Purpose of the ears. Necessity of taking good care of them. Foreign bodies in the ears. Water in ears when swimming. Dangers of discharging ears; why they should be treated. How to clean the ears—no hard substance should be used.

Test hearing by means of ticking of watch, one ear to be closed by index finger of pupil.

The teeth.—Importance of having good teeth. Temporary teeth; number. Should be filled when decayed; not to be removed until very loose.

Permanent teeth; number. Importance of keeping repaired; decay spreads from one to another. Danger in biting hard substances or cracking nuts.

Tooth brush; how to use; how to keep clean. Never use one belonging to another. Use of toothpick; do not use in company; kinds of toothpicks; metal toothpicks objectionable—injure teeth.

Great importance of keeping teeth and mouth clean.

The hair and the finger nails.—Hair as a protection; serves as clothing for animals. Those in warm climates have short hair, those in cold climates long hair.

Dandruff causes baldness; is communicable. Brushing, combing, and washing the hair. Natural oil of hair. Hair needs fresh air. Why Indians have good hair.

Lice dangerous and filthy.

How the finger nails grow. What happens when injured or lost by accident. Injury by biting or trimming to the quick. Bad appearance if dirty; attractive if clean and neat.

Examine nails of pupils.

Food.—Purpose of. All plants and animals require food to live. Our bodies made up of what we take into them in the way of food and drink. To have healthy bodies we must eat good food and drink pure water. Food should be fresh or properly preserved. Much danger in eating decayed food or food to which flies and other insects have had access. Food should be kept covered, protected from both dust and insects. Milk, eggs, and fish very easily spoiled—especially fish. All meat should be well cooked before eaten. Food can easily be contaminated by being touched with dirty hands. Cooks should be very clean and neat. Most food should be handled with knife and fork or spoon.

Digestion.—Definition. Important part takes place in the mouth when food is chewed. Perfect chewing makes whole process easy. We can not control digestion after food is swallowed, but can while it is still in our mouths. Good digestion means health and happiness.

Name organs of digestion, beginning with teeth. Speak of mouth digestion, stomach digestion, and intestinal digestion. When food is well chewed there is less waste and smaller quantity is required.

Aids to digestion: Good temper, good cooking, good company, fresh air, regularity of meals.

Indigestion.—Definition. Effects.

Causes: Overeating, fast eating, irregularity in eating, too much fluid at meals, poor cooking, alcohol, tobacco, anger, worry.

Plain food, easy to digest, most wholesome; gives strength to body and does not cause illness. Impossible for people with poor digestion to be very happy. Pastries and highly seasoned food not very wholesome; should be eaten very sparingly, if at all.

Tobacco.—Tobacco prevents food from digesting, produces nervousness, injures heart, weakens muscles, weakens eyes, stunts growth, dulls intellect, weakens moral sense. Is especially bad for the young; not quite so bad for adult people, but bad for anyone. Is also an expensive habit.

Note.—Judge Lindsey, of the juvenile court of Denver, Colo., says that the use of tobacco is responsible for more crime among boys than any other one thing.

Alcohol.—Alcohol probably the worst enemy of the race. Is injuring the Indians more than any other one thing. Has all the bad effects of tobacco and more. (Mention as impressively as possible its physical, social, and economic effects.)

Body heat and clothing.—Normal body heat. Abnormal body heat—fever. Develop this subject conversationally.

Why clothing is necessary; clothing of animals; how clothing protects the body; dangers from wet clothing, wet shoes, dirty clothing; why clothing should be changed frequently. Kinds of clothing best to wear. Kinds of shoes best to wear.

Discuss materials from which clothing is made and sources from which obtained.

Tuberculosis.—A very common disease, especially among Indians. Curable. Great importance of early treatment. Medicines do not cure; patent medicines nearly always injurious. Far more easily preventable than curable. Clean, sunny, well-ventilated houses, good habits, good food, prevention of spitting, prevention of dust, and proper methods of caring for those who have the disease the best means of preventing others from getting it.

Destruction of sputum of those having it very important; also use of separate beds, eating utensils, etc. Sunlight the best germ killer.

Remedies: Rest, good food, out-of-door life, and ventilation of living rooms and sleeping rooms. (Tell how to make sputum cups of paper for sick.)

Smallpox and typhoid fever.—Both of these dangerous diseases. Smallpox may produce blindness and disfigurement even when not fatal. Is now preventable by vaccination. Examine pupils as to vaccination scars and advise vaccination of those not having them. Tell history of this disease.

Typhoid fever one of the most serious of all diseases. Is a disease of filth; always spread by wastes from sick persons—usually by contaminated water. Emphasize importance of protecting water supply, and of drinking only boiled water when typhoid is prevalent. Tell of the feasibility of protection by inoculation. Mention United States Army history and present practice as to this.

Exercise and health.—The body needs exercise or use. Aids digestion; develops muscles; makes body strong and healthy. Contrast results of exercise and lack of it. When and how to exercise. Importance of regularity. Do not cool off in drafts after exercising, nor too suddenly. Swimming said to be best exercise. Walking very good. Most kinds of work and play very good. Exercise in open air much better than in rooms. Have children learn and repeat a few simple rules as to exercise.

Home sanitation.—Clean, well-kept homes exceedingly important. Health always endangered in dirty, untidy homes. Really a pleasure to keep homes in good condition. Good homes always admired and enjoyed by all who see them. Both houses and premises should be kept neat and clean. Dust the most dangerous thing in the house, particularly if old dust from persons and clothing of people. Good cupboards very important; also, well-screened windows and doors. Floor coverings not of first importance. Rugs better than carpets; keep well cleaned; air frequently. Importance of clean beds and bedding, etc.

Importance and beauty of clean, neat premises. Stables, etc., should not be too close to house. All members of family should co-operate in keeping houses and premises clean. Children can easily help a great deal.

Home gardens as factors in good living.—Subject has only indirect relation to that of hygiene and sanitation, but the relation is real and important. Every family should raise a good garden each year; otherwise it is nearly certain not to have many vegetables and health will suffer. Strictly fresh vegetables of many kinds much superior to those not so fresh obtained from hucksters or in stores. Much cheaper to raise than to buy. Convenience in having at hand important. Gardening very healthful work; also, work which yields much pleasure and valuable education to those who do it, if they do not consider it drudgery. Nearly all Indian families could have good gardens; many do. Study best methods of gardening. Learn to like many vegetables, etc.

Milk cows, poultry, etc., as aids to good living.—Milk is one of the very best foods, particularly for young people. Butter also is a valuable food; also, some other milk products. All are expensive to buy and are things which become contaminated easily. Very

desirable to keep a cow and have milk and butter at home if possible; also, a great economy if on a farm, or where feed and pasture can be had at reasonable cost. One should treat cow well, keep her clean, keep stable clean, milk regularly and carefully, and take very good care of milk. Keep utensils scrupulously clean. Pleasure as well as work in doing all this.

Poultry also profitable. A pleasure to raise and keep. Eggs a valuable food. Poultry should be well housed, provided with clean food and water, and otherwise well cared for. An especially good thing for girls to raise.

Everything that contributes to good living contributes to good health and happiness.

II. FIRST-AID TALKS.

Bandages.—Material; cleanliness; purpose; reason for rolling; overlapping; reversing. Compresses—definition and purpose.

Practical exercise: Bandage imaginary wounds; stop imaginary bleeding by compresses, using stick to tighten bandage.

Bleeding.—Cause of; blood in jets; steady blood; color of arterial blood, of venous blood. Where to apply pressure to stop bleeding; danger of shutting off blood by bandages for more than an hour. Pressure with thumb or finger while waiting for bandage.

Practical exercise: Demonstrate application of bandage, compress, and thumbs to stop bleeding.

Bleeding from the nose: Sit erect, head slightly backward; use damp cloth to soak up blood; ice or cold water at back of neck; cold cloths over nose and forehead; may hold nose and breathe through mouth; plug nose with cotton or soft rag if necessary, attach string to plug to remove.

Broken bones.—Handle carefully so that the broken ends will not cut the soft parts; do not touch the place of injury, especially if there is an open wound. If necessary to handle injured person, broken bone must be supported by boards or hands, so that the ends of the bone will not cut muscles, blood vessels, and nerves. Never drag injured persons. Splint, definition and use of. Call a doctor.

Practical exercise: Apply splint and protective support to imaginary broken limb.

Burns.—Burns produced by fire, hot objects, and certain medicines. Apply vaseline, lard or soda, or equal parts of lime water and linseed oil.

Burns caused by escaping steam or hot water are called scalds; treatment the same.

Bruises.—Bruises are caused by blows with blunt instrument. Parts swell and become black or blue, owing to bursting blood vessels. Apply cloths wrung out of warm or cold water. Change often. Keep parts at rest.

Choking.—Definition; danger; prevention; articles that may cause death; danger of putting objects in mouth.

Treatment: Blows between shoulders; remove object with finger or bent spoon handle.

When hard objects, like tacks, keys, and pins are swallowed, eat plenty of oatmeal, bread, potatoes, and hard-boiled eggs to prevent injury to intestines.

Convulsions or spasms.—Usually seen in children under 5 years of age.

Causes: Indigestible food, such as nuts, fruits, and other things that are not well chewed; constipation and worms also are causes.

Symptoms: Jerking of head and twitching of muscles of body; Violent struggles followed by unconsciousness.

What to do: Place feet and legs in warm water; apply cloth wrung out of cold water to forehead and temples, changing the cloth every minute or two, so as to keep the head as cool as possible; cause the bowels of patient to move.

Cuts and nail wounds.—Cuts made by rusty or dirty knives and deep punctured wounds made by nails are very dangerous; should be allowed to bleed freely to wash out dirt and germs; wash wound with boiled water; danger of tetanus.

Fainting.—Causes: Pain, fatigue, loss of blood, bad ventilation, objectionable sights, as flowing of blood.

Symptoms: Face pale, lips white, breathing quickened, cold sweat on brow and palm of hands.

What to do: Lay sick person flat on floor or bed; open doors and windows; loosen clothing; sprinkle cold water on face; give cold water or milk when able to swallow.

Fits.—Symptoms: Person unable to control muscles and throws arms and legs in all directions; froths at the mouth; face dark and veins of neck distended. (Condition commonly known as epilepsy.)

What to do: Loosen collar; place handkerchief or clothespin between the teeth to prevent biting the tongue; rest in a darkened room.

Frostbites.—Caused by intense cold which interferes with circulation; usually affects ears, fingers, and toes; very painful condition; may last for several weeks.

What to do: Rub affected parts with snow or ice water in cold room until tingling sensation is felt. This sensation shows that the circulation, which had stopped, has returned. Patient may then be brought nearer a fire or stove. The sore of a frostbite should be kept clean and treated as any other sore.

Sunstroke.—Causes: Fatigue and exposure to the rays of the sun during hot weather.

Symptoms: Dizziness, weakness, sick stomach; may become sleepy and partly unconscious; eyes red; skin hot and dry.

What to do: Keep patient cool by applying cold water to head, neck, and chest, or by wrapping patient in sheets wrung out of cold water. Wrap ice in flannel and apply to head.

Heat exhaustion.—Causes: Exposure to excessive heat, other than the rays of the sun, as the heat of boiler room, etc.

Symptoms: Skin cold and pale, giddiness, weakness, and sick stomach.

What to do: Do not use cold applications, as skin is cold and pale; free ventilation, perfect quiet, cup of strong coffee when able to swallow.

Clothing on fire.—Do not run; lie down, use blankets or coat as wrap; roll over and over to put out the flames; dangerous to stand, as flame will reach face and be breathed through mouth and nose.

Note: Protect face as much as possible in passing through a burning building.

Artificial breathing.—The bite of a poisonous snake, electrical shocks, the effects of certain drugs, anesthetics, and partial drowning may cause the muscles of respiration to cease acting and make

it necessary to use some artificial means to make the air pass into and out of the lungs until the nervous system can recover from the shock and normal breathing be established.

Several methods may be employed, but for general purposes the following seems to be the most effective: The patient is immediately turned face downward and a heavy folded coat or a piece of wood is laid under the chest and upper part of the abdomen. The operator then standing astride and facing the head of the subject, places his hands, one on either side, over the lowest parts of the ribs. By slowly bending forward and thus pressing on the thorax the air is driven out, and by gradually relaxing the pressure without removing the hands from their places the air is drawn into the lungs. These movements should be performed about 12 or 14 times a minute and kept up from a half to two hours.

Except in cases of partial drowning, where the first thing is to get the water out of the lungs and clear the air passages of mucus, another method is to place the patient on his back and put a pillow or folded coat or a bundle of weeds or grass under the shoulders to throw the chest out; loosen the clothing at the neck and waist and start artificial respiration by grasping the patient's arms and pulling them up far over the head while the operator counts one, two, three. The arms are then brought down to the sides and firm pressure exerted against the chest walls, so as to force the air out of the lungs; these movements are kept up from a half to two hours at the rate of 12 or 14 times a minute. When there are two or more persons to care for the patient, one should press the abdomen and chest when the arms are brought down to the sides in such a way as to force the abdominal organs and diaphragm upward.

The position with the patient on his back has the disadvantage of requiring the tongue to be drawn out of the mouth and held so as not to obstruct breathing.

Practical exercise: Drill in reviving supposed cases of apparent drowning and in producing artificial respiration in other cases.

Drowning.—Definition: Suffocation caused by entrance of water into the lungs.

Symptoms: Evidence of body having been in water; swollen, discolored face, mouth usually open, nostrils closed by mucus.

What to do: Cleaning out nostrils and throat with finger; artificial respiration; strong coffee when able to swallow; rest in bed for several days.

Practice exercise: NOTE.—In every case of drowning in which the body has not been in the water more than an hour try to revive, and continue efforts for two hours before giving up.

Snake bites.—Suck poison out of wound if mouth is not sore. Apply bandage or handkerchief above wound, if on limb, and, with stick, make firm pressure. Leave in position until physician comes.

Practical exercise: Drill in applying bandage and tightening by means of stick.

Suffocation from gas.—May be caused by escaping illuminating gas in a closed room or from coal stoves where there is no chimney draft or open windows.

What to do: Let plenty of fresh air into room. Loosen all tight clothing. Use artificial respiration; strong coffee when able to swallow.

FOURTH GRADE.

(Two lessons per week.)

Food and drink.

Cooking and eating.

Digestion and exercise.

Teeth.

Communicable diseases:

Common kinds.

Causes.

Methods of spread.

Symptoms.

Treatment.

Prevention.

Circulation:

Breathing.

Exercise.

Ventilation.

Personal hygiene:

Care of teeth, skin, eyes, nose, ears, throat, hands, and feet

Care of clothing.

Public health:

Location of buildings:

Care of grounds.

Disposal of garbage, sewerage, etc.

Water supply.

Milk.

Flies and mosquitoes.

NOTE.—Definite assignment of work in textbooks.

FIFTH GRADE.

(Two lessons per week.)

Brief study of the framework of the body.

Muscles and exercise.

Skin.

Emergencies, and what to do:

Cuts, bruises, burns, sprains, fractures, bites, stings.

Foreign bodies in eyes.

Poisons.

Sunstroke, drowning, freezing.

Brain.

Nervous system.

Voice.

Self-government:

- Value of good habits.
- Temperance in all things.
- Early to bed.
- Control of appetites, temper.
- Tobacco, cigarettes.
- Alcohol.

NOTE.—Definite work should be assigned in textbooks.

SIXTH GRADE.

(Two lessons per week.)

Digestion and absorption.

Circulation.

Respiration—ventilation.

Voice.

Communicable diseases:

- Causes, symptoms, methods of spread, treatment and prevention of; tuberculosis, trachoma, diarrheal diseases, colds, tonsilitis, skin diseases, lice, smallpox, diphtheria, pneumonia, typhoid fever, scarlet fever, malaria, whooping cough, measles, mumps, etc.

Home sanitation:

Care of wooden floors.

Ventilation.

Care of kitchen, living room, bedroom (giving special attention to bedding).

Privy.

Barn.

Milk.

Water supply.

Flies.

School sanitation.

Review work of previous grades.

NOTE.—Definite work should be assigned in text books.

GEOGRAPHY.

No other study in the curriculum should appeal so strongly to the Indian as geography. The boundaries of his known world are so very small that there is a vast expanse of mystery outside. Taking advantage of this fact, the resourceful teacher can lead the pupil from his little-known world to the great unknown in such a manner that his eyes will always be big with wonder.

It should be kept in mind that in geography the subject should be so presented that pupils will learn not merely to observe but also to observe accurately the phenomena in nature as well as how the powers of nature are adapted to the use of man.

Pupils can thus be brought to appreciate how geography has determined and changed the locations of people and influenced their mode of living. The Indian race once lived in this country largely as a people of the chase, because of the sparse settlement and abundance of game; but with a more dense population, the vanishing of the buffalo and the deer, a complete change in the manner of life must obtain.

Begin with what the pupil knows, his home, the school, treating direction, distances, subdivisions of land and water, the climate and seasons, with their influence upon life and industry and the distribution of population. Bear in mind that a close relationship exists between history and geography and let each subject assist in the consideration of the other.

FIRST GRADE.

(Is a part of the oral English.)

Nature's preparation for winter.—Migration of birds, falling of leaves, ripening of seeds, maturing of bulbs. Study the birds that remain through the year, as the sparrow, crow, blackbird, or others of the neighborhood.

Study of seeds.—Learn to recognize the common ones, as corn, cotton, wheat, oats, pumpkin, pea, and bean.

Fall flowers.—Recognition of such fall flowers as the goldenrod, sunflower, or others of the neighborhood.

Animals.—Give attention to the barnyard fowls, as chickens, ducks, geese, guineas, peacocks. Their appearance, habits, and uses should be considered.

Winter.—Its effect upon plants such as deciduous and evergreen trees, annual and perennial plants. Influence of the season upon the clothing, games, and work of the pupil, the farmer, and other

persons of the community. Consider frost, ice, snow as to being winter forms of water; their appearance and their uses.

Opening of spring.—Influence upon the life, habits, work, and games of the community. Effect upon the flowers, leaves, and birds.

Spring flowers.—Learn to recognize those of common occurrence.

Birds of spring.—Learn to recognize those that have been away as they return. Observe their mating and nesting.

Trees.—For recognition study the common trees, as the cottonwood, sycamore, elm, maple, pine, and spruce. Pay attention only to those belonging to the locality, including fruit trees and vines. Note their characteristics as to size, shape, leaves, bark, and seeds.

SECOND GRADE.

(Is a part of the oral English.)

Trees.—Further practice in recognition. Make blue prints of leaves. Note the parts—root, stem, and leaves. Buds: What are they? Note their arrangement and provision for their protection.

Distribution of seeds.—By winds, animals, water, man, propulsion. Make a collection in order to recognize them.

Germination of seeds.—Discuss and practice the germination of seeds belonging to the economic life of the locality as corn, cotton, pumpkins, beans. Boxes should be provided for the purpose.

Bud development.—Observe the opening bud and its development into the leaf, flower, and fruit.

Birds.—Divide into groups of those that help and those that hinder the farmer.

Animals.—Study those that belong to the home and farm. The cat, dog, horse, mule, cow, pig, sheep, goat. The common wild animals, as the rabbit, squirrel, prairie dog, rat. Pay attention to the proper methods of caring for or protecting against them.

Location.—Learn north, south, east, and west.

Weather observations.—Throughout the year note and record temperature. Study the seasons; weather changes and their influence; clouds, their formation and color; the sun as the source of light and heat, its rising and setting making day and night, its relation to life.

Winds.—Force, direction, and effects.

The earth.—Learn hill, plain, valley, mountain, creek, river, pond, lake, island, rocks, gravel, sand, and soil.

THIRD GRADE.

(Is a part of the oral English.)

Home geography should be studied in this grade in a very informal manner. Some simple text should be used as a guide, and read both for drill in reading and for the sake of its subject matter.

The earth.—Its shape and size. Designed to be the home of man. Surrounded by the air which supports life. Its surface divided into land and water.

Water.—Forms: Clouds, fog, dew, rain, hail, snow, ice. Bodies: creeks, rivers, ponds, lakes, oceans. Uses: To support plant and animal life; an aid to commerce. Tell the story of a drop of water.

Land.—Forms: Rock, gravel, sand, soil. Elevations: Hills, valleys, plains, mountains. Divisions: Islands, continents.

Seasons.—Contrast the four seasons as to temperature, plant life, and human activities. The advantage of having the seasons. What causes the seasons? Position of the sun observed and length of day and night.

Productions.—Name the leading products of your locality, such as corn, wheat, oats, barley, cotton, alfalfa, and tell briefly how and why they are grown. Make a list of them in the order of their importance. Name different vegetables and fruits and consider in the same manner.

Transportation.—Wagons and horses, automobiles, trains, boats. Why are products carried from one place to another? The postal system.

Your town.—What determined its location. Its size. What useful articles are produced there. The need of cities and towns. The city government, officers, health regulations.

Maps.—Develop the idea of a map as a kind of picture which shows a very large area within very small boundaries. Have a map made of the school grounds or farm, locating streams, ponds, fields, buildings, etc., and indicating the points of the compass. Show that maps are made to a scale in order that proper proportions may be maintained.

Weather.—Keeping a weather record throughout the year will do much toward keeping interest alive.

FOURTH GRADE.

An elementary textbook should be used and studied for the purpose of obtaining information rather than as a reader. Discuss each day with the class the lesson for the next day, and after study require recitations.

I. The earth:

- (a) Size.
- (b) Shape.
- (c) Grand division of land and water.
- (d) The zones, latitude and longitude.
- (e) Review mountains, lakes, rivers, islands.

II. Globe study:

The globe should be suspended from the ceiling to admit of its being raised and lowered. Strive to acquaint the pupil with these points as to the earth:

- (a) Size and shape.
- (b) Land and water distribution.
- (c) Poles, climatic circles, latitude, longitude.

III. North America:

- (a) Position.
 - 1. In zones.
 - 2. In hemispheres.
 - 3. In relation to bounding waters.
 - 4. In relation to other continents.
- (b) Form as determined by the principal indentations and prolongations, which should be mentioned.
- (c) Physical features.
 - 1. Highlands.
 - 2. Lowlands.
 - 3. Drainage. (Use a relief map.)
- (d) Climate.
 - 1. Heat belts.
 - 2. Temperature.
 - 3. Rainfall.
 - 4. Winds.
- (e) Vegetation and animal life.
 - 1. Distribution as determined by climate.
- (f) Resources, products, and industries of the various sections.
- (g) Draw an outline map.

IV. The United States:

Make use of relief maps and show the relation between physical features and vegetation, climate, density of population, and industries.

Make detailed study of the country by sections, using as a model the outline given below.

- (a) New England States.
 - 1. Position in the United States.
 - 2. Climate.
 - 3. Surface.
 - 4. Drainage, river systems.
 - 5. Production.
 - 6. Occupations of the people.
 - 7. Boston the commercial, educational, and historic center.
- (b) Draw outline map of the United States locating principal rivers, mountain systems, lakes, cities, and industries. A large

skeleton outline map on the wall on which to show products will stimulate interest.

FIFTH GRADE.

I. South America, Europe, Asia, Africa:

Construct a relief map of South America or Europe—a relief or physical map being before the pupil as he works.

Each continent should be studied by means of an outline like the one below.

South America:

- (a) Position in hemisphere, zones, relation to North America.
- (b) Size in comparison with North America.
- (c) Boundaries, including principal indentations and prolongations of coast line.
- (d) Surface.
Locate mountain system; a few lofty peaks, highlands; lowlands and great plains. (Use relief map.)
- (e) Drainage.
River systems.
Lakes.
- (f) Climate.
Heat belts.
Rainfall.
Prevailing winds.
- (g) Principal animals.
- (h) Vegetable life and products.
- (i) Mineral life.
- (j) Races of people and their occupations.
- (k) Chief cities.
- (l) Draw an outline map.

Begin now the use of the last book of the series going more exhaustively into the subjects treated than in the lower grades. Be careful, however, not to load the pupil's memory with a lot of geographical facts that do not touch his life and are learned only to be forgotten.

II. Physical geography:

- (a) Size and shape of the earth.
- (b) Movements.
 - 1. On its axis.
Day and night.
 - 2. Around the sun.
The year and seasons.
- (c) Latitude and longitude.

- (d) Continents and oceans.
- (e) Rivers and river valleys.
- (f) Plains, plateaus, and mountains.
- (g) Life.
 - 1. Plant.
 - 2. Animal.
 - 3. Races of men.

III. North America:

Study the continent as a whole treating of—

- (a) Size and position.
- (b) Coast line.
 - 1. Oceans.
 - 2. Gulfs and bays.
 - 3. Capes and peninsulas.
- (c) Surface.
 - 1. Atlantic coastal plain.
 - 2. Appalachian highland.
 - 3. Great central plain.
 - 4. Rocky Mountain highlands.
 - 5. Great Basin.
 - 6. Pacific highlands.
- (d) Drainage.
- (e) Climate.
 - 1. Modifiers.
 - 2. How modifiers affect different portions of the continent.
- (f) Products.
 - 1. Animal.
 - 2. Vegetable.
 - 3. Mineral.
- (g) People.
 - 1. Races.
 - 2. Occupations.
- (h) Political divisions.

SIXTH GRADE.

I. United States:

- (a) As a whole.
 - 1. Size.
 - 2. Boundaries.
 - 3. Names of States, with capital and metropolis of each.
 - 4. Name two seaport cities and tell for what each is noted.
- (b) By sections.
 - 1. Surface.
 - 2. Climate.

3. Products.
4. Exports.
5. Imports.
6. Noted cities.

(c) Develop a products map.

(d) Dependencies.

1. Name and locate each.
2. Climate.
3. Surface.
4. Products.
5. Principal cities.
6. Importance to United States.

II. Canada as a whole:

- (a) Location and boundaries.
- (b) Surface.
- (c) Climate.
- (d) People.
- (e) Government.
- (f) Products.
- (g) Important cities.

III. Mexico as a whole:

Should be studied with an outline like that of Canada.

IV. Central America as a whole:

Should be studied with an outline like that of Canada.

V. West Indies as a whole:

- (a) Locate.
- (b) Importance.
- (c) Chief cities.

VI. South America:

- (a) Size and shape compared with North America.
- (b) Boundaries.
- (c) Surface.

1. Three river systems.
2. Three highlands.
3. Pampas, silvas, llanos.

- (d) Animal life.
- (e) Products.
- (f) People and occupations.
- (g) Chief cities.
- (h) Brazil, Argentina, and Chile.

1. Compare with United States as to surface, climate, industries, progress.
2. Chief cities.

VII. Europe:

(a) As a whole.

1. Location and size.
2. Long coast line.
3. Boundaries.
4. Climate.
5. Productions.
6. Manufactures.
7. Great cities.
8. People.
 - Races.
 - Occupation.
 - Reasons for density of population.

(b) Great Britain and dependencies; France; Germany; Spain and Portugal; Austro-Hungary; Norway, Sweden, and Denmark; Russia; Switzerland and Italy; Greece; the Balkan Peninsula.

1. Surface.
2. Climate.
3. Production.
4. Chief cities.
5. People and their occupations.

VIII. Asia:

(a) The Continent as a whole.

1. Size and position.
2. Coast line.
3. Great northern plain and its rivers.
4. Great central highland.
5. Plateau of Thibet.
6. Himalaya system and Mount Everest.
7. Rivers of South and East.
8. Peninsulas.
9. Islands.
10. Climate and product.
11. Productions.
12. Principal cities.
13. People.
 - Races.
 - Occupations.

(b) Russia, Asia Minor, India, China, Japan, Australia, and other Pacific islands.

1. Climate.
2. Productions.
3. Chief cities.
4. People and their occupations.

IX. Africa as a whole:

(Studied with outline similar to that for Asia.)

X. Research:

Assign to pupils throughout the year topics for special research, such as coal mining in Pennsylvania, the corn belt, cotton production in the South, harbors for shipping, Chicago as a trade center, sugar production in Louisiana, oil and gas in Oklahoma, the iron industry of Minnesota, fruit growing in Washington, coffee plantations of Brazil, cattle raising in Argentina.

HISTORY.

The greatest thing a teacher ever brings to a child is not subject matter, but the uplift which comes from heart contact with a great personality.—Search.

This outline contemplates the study of historical characters and events throughout the course. The first three years might be called the "story" period, wherein stories are told and reproduced which center about great characters and are illustrative of the characteristics of the people. While their prime object is the creation of interest in, and the furnishing of a basis for English work, they should also aid in acquiring early in life a knowledge of historical events.

In the next three years—fourth, fifth, and six grades—textbooks suitable to the advancement of the pupils should be used. There is a large number of well-written texts covering our national history in study form. They have been brought within the vocabularies of the pupils of these grades, and pupils should be able by this time to read readily and understandingly. The objects in these years should be not only to acquire the historical facts, but to cultivate the habit of reading, which will be easily formed if the reading be well within the scope of the child's understanding.

The next four years are the vocational grades. During each of these years it will be profitable, provided an ample supply of books may be found, for each pupil to read several single-volume biographies and a large number of shorter biographies. The plan contemplates a large amount of reading on the part of pupils. If they have not been properly prepared for doing this reading the work will be difficult and often uninteresting. If they have acquired the habit of reading and arrangements can be made to have much suitable matter within easy reach, the outline of work for the third and fourth years will largely care for itself because of the interest and fascination that such work will possess. A good test for a teacher to apply to her work is to ascertain whether pupils are reading with interest and enthusiasm. Teachers must remember that every historical event need not, in fact ought not to be, discussed in formal recitation. After the reading habit has been acquired the story should be read as a whole, generally previous to the recitation period, and only such matters referred to during recitation as will vivify the larger picture and make the information a real part of the pupils' permanent knowledge.

FIRST GRADE.

In the first grade make holidays and other special days and occasions the basis for the stories. They may be illustrated by drawings, objects, pictures, or by acting whenever this is practicable. Suggested stories are:

"The Story of the Man who would not Turn Back" and other Columbus stories of a suitable character.

"The Story of Pocahontas, Samoset and Squanto" and other Friendship Stories.

"Stories of the Mayflower;" "The Pilgrims."

"The Story of the Famine;" "The Story of the First Winter;" and "The Story of the First Thanksgiving;" "Early Schools and Churches."

"Lincoln Stories;" "The Cabin in the Woods;" "His School Life"; What he used for a Slate; His Books; His Strength; Lincoln and the Pig; Slavery—The Freeing of the Slaves.

"Stories of Washington;" "Riding the Colt;" "Desire to be a Soldier;" "Loyalty to his Mother;" "As a Surveyor;" "His Accident in Crossing the River on Raft," etc.

"Other Stories of Colonial Life;" "Smith and the Compass;" "He Who will not Work Should Not Eat;" "The Fox Tail in Church" (Puritan Discipline); "Bradford and the Deer Trap;" "Miles Standish and Plymouth Rock;" "Making Corn Grow;" "Making Fire With Sticks;" "Borrowing Fire;" "How John Smith Stopped Swearing."

Other similar stories may be used, the teacher keeping in mind that an ideal story is graphic, deals with facts, and forms the basis for a lesson which will aid in establishing character.

SECOND GRADE.

Enlarge on the stories heretofore used and the new ones suitable for the special days.

Columbus days, Thanksgiving, Christmas, Lincoln and Washington's Birthdays, Arbor Day, Memorial Day, Independence Day (Liberty Bell), and other special days, such as prevention of cruelty to animals, health day, etc.

By means of pictures or other illustrated methods tell stories of home life; manners and customs of people and events, not only of long ago, but of present time.

"The Whale Oil Lamp," "Puritan Dress," "Flint and Tinder in Starting Fires," "The Spinning Wheel," "Stocks," "Pillory," "Oil Paper and Windows," "The Writing Quill," "Wooden and Pewter Dishes."

Use additional stories of historical characters, as:

"Roger Williams and His Friend Massasoit"; "Stories of William Penn, Paul Revere, Betsy Ross"; "Marion and His Sweet Potato Dinner."

Study the condition of early times, comparing them with what they are now:

Post riders; mail, books, papers, roads, shoes, clothing, hand mill.

THIRD GRADE.

This grade is still within the story-telling period. In some cases pupils may be provided with books which contain suitable historical stories, written so that they are within their comprehension. Incidents and events heretofore referred to may be enlarged upon. The following characters furnish the basis for work in this grade:

Benjamin Franklin.

The Early Life of Washington.

Daniel Boone.

Israel Putnam.

Eli Whitney.

Robert Fulton.

Lafayette.

Lydia Darrah.

Use more Lincoln stories and others of a similar character.

In these three grades pupils will have read in their regular English work a great many stories of historical significance. The object of the work herein suggested is to supplement and round out this fragmentary historical reading.

FOURTH GRADE.

Each pupil should be supplied with a textbook containing stories and other historical material. If books are furnished which contain matter difficult to understand, descriptions of battles or other material not useful and lacking interest, such portions should be passed over unused. The whole scope of the United States history should be covered in the fourth, fifth, and sixth grades. The part studied in the fourth grade should cover the period of explorations and discoveries and reach to the events immediately preceding the Revolutionary War. Spend much time upon the larger events of history, but not much upon dates, none upon battles, and little or no time upon forms of government or political questions which are beyond the comprehension of pupils. Be sure that the pupil has clearly in mind the geographical location of the places referred to and the approximate time of events as related to other important ones. Use

maps continually and all illustrations which are essentially true in detail.

Most of the history of this period can be made to center around the following characters:

Columbus.	Standish.	Oglethorpe.
Magellan.	Bradford.	Wolfe.
Drake.	Father Marquette.	The Arcadians.
Raleigh.	Roger Williams.	Benjamin Franklin.
Smith.	Penn.	
Champlain.	Lord Baltimore.	

FIFTH GRADE.

This grade should cover that part of United States history beginning with the events which bring about the Revolutionary War and extending to 1829, which marks the time when events are fast occurring which are to culminate in the Civil War. During this time the major portion of the work should be confined to:

The condition of the colonists at the time of their disagreement with the mother country.

Their social, economic, and trade conditions.

The scope of territory which they controlled.

The Stamp Act and other causes of the Revolutionary War.

The Declaration of Independence.

The opening of the war, with just a few battles to illustrate important periods of the war.

The beginning at Lexington and Concord.

The suffering at Valley Forge.

The Battle of Saratoga.

The end at Yorktown and the results.

There is much material suitable for study based upon conditions of the people; their home life—manners, customs, etc., during and immediately following the war, which can occupy much of the time of pupils, rather than military events; the failure of the first form of government established; the Articles of Confederation and the necessity for a strong government as contemplated by the Constitution; its adoption and election of the first President; a study of the character of our Constitution; the preamble; its significance; the departments of Government—legislative, executive, and judicial—and a few of the principal divisions under each.

Financial and political questions should be touched very lightly, except as they are easily within the comprehension of pupils. Foreign relations may be studied in so far as they show causes of our wars. The War of 1812, events leading up to and the results of that war are of importance. Changing economic conditions, as indicated by the following, should be carefully studied: Immigration to the

country west of the Alleghenies, the steamboat, the national road, factories of the North and plantation life of the South, northwest territory, the cotton gin, the slave trade, industry and commerce.

The following characters and events furnish a basis for much of the study:

Washington.	Eli Whitney.
Israel Putnam.	Robert Fulton.
John Paul Jones.	Purchase of Louisiana.
Daniel Boone.	Purchase of Florida.
Betsy Ross.	Building of railroads.
Lewis and Clark Expedition.	Admission of new States.
Dolly Madison.	Erie Canal.
David Crockett.	The growth of national sentiment.
Kit Carson.	

SIXTH GRADE.

This period covers the events preceding the Civil War and includes the causes of this great struggle. In order that this may be properly understood, the difference in the economic and social condition of the North and the South should be studied, the territorial growth of the Nation, the discovery of gold in California, questions of transportation facilities, admission of additional States, national resources, public land, growth of nullification sentiment, fugitive slave law, personal liberty bills, and other forms of the antislavery movement.

Beginning with the Civil War, the difference in the resources of the two sections; a few of the principal engagements, including Gettysburg, Vicksburg, and Appomattox, should be studied; the Emancipation Proclamation; the cause of the war and the conditions of the country as brought about by the long struggle; the rapid growth and development of the country following the Civil War; the economic development of the country as affected and extended by the use of railroads, canals, steamboat and steamship lines, telegraphs, and telephones; the use of improved farm machinery in the industries of the country; method of nominating and voting for public officers; suffrage; civil service; methods of surveying public lands; enactment and extension of homestead law, etc.

A further study of the territorial growth of the United States; the Spanish-American War; and the emphasis and trend of American life toward agricultural activities. Some of the political events of this time may be studied, but those difficult of comprehension must be omitted. Study the larger political beliefs of (1) the Democratic Party; (2) the Republican Party; (3) the Prohibition Party.

Current events should receive careful study. While these should be given attention during the preceding grades, pupils may now begin to see the significance of many of the current happenings.

CIVICS.

In the glorious days of Greece it was the custom among the youths of Athens to subscribe to the Ephebic oath when first admitted to the duties of citizenship. It was a sacred vow, and the "city" meant the nation:

We will never bring disgrace to this, our city, by any act of dishonesty or cowardice, nor ever desert our suffering comrades in the ranks; we will fight for the ideals and sacred things of the city, both alone and with many; we will revere and obey the city's laws and do our best to incite a like respect and reverence to those above us who are prone to annul and set them at naught; we will strive unceasingly to quicken the public's sense of civic duty; that thus in all these laws we will transmit this city not only not less, but greater, better, and more beautiful than it was transmitted to us.

Success in teaching civics is peculiarly dependent upon the inspirational personality of the instructor and the atmosphere of imagination, enthusiasm, and patriotism with which he surrounds the subject. Civics is often a dead subject—one dreaded by instructors but little less than by students—and here is the problem, to make of it a live subject. A desire for it must be created, and the first step is to vitalize the subject. The chief texts should be the adjacent municipalities, supplemented by local newspapers and appropriate magazine articles. After all, the personality and preparedness of the teacher count for everything; a reluctant teacher will never succeed in really teaching it, much less in truly inspiring his embryonic citizens.

In all grades above the second there should be provision for practical civics or laboratory practice in civics. This should take the form of play at civics; in this form it has a strong appeal even to young children. The school can be organized into two miniature municipalities, one for the boys and one for the girls. These should be modeled, in organization at least, after the nearest and simplest actual municipal unit. In these organizations the pupils exercise an initiative (mildly and tactfully supervised) in minor discipline.

Practice should be supplemented by some simple form of instruction. This, however, should be done not mechanically but inspirationally, applying it to local conditions actually existent. The teacher will be expected to articulate the subject matter with civic conditions in the community, county, State, United States. In this field the teacher has rare opportunity to broaden the experience and enrich the capacity of the pupils.

An excellent opportunity is afforded for stimulating the pupil to make investigations on his own account and obtain through his own exertions and correspondence much information concerning neighboring municipal life and organization. The course should be intensely practical and concrete rather than philosophical. In the latter part of the course short talks can be given by both teachers and pupils on topics and questions of the day—suffrage, parties, party organizations, party principles, bosses and rings, primaries, nominations, conventions, the elective franchise, votes and voting, civil service, the ballot, the tariff question, the currency question, monometallism, bimetallism, taxes and taxation, initiative, referendum and recall, direct government, representative government, various other forms of government. The course, properly carried out, should greatly inspire patriotism.

THIRD GRADE.

I. Why we have laws:

- (a) Should a teacher keep order in school? Why?
- (b) Why we have rules and referees in games.
- (c) What would happen if we did not have them?
- (d) Why we have laws.
- (e) Laws are made to protect persons—how and why?
- (f) Laws are made to protect property—how and why?
- (g) How laws settle disputes.
- (h) Some of our laws are new.
- (i) Many of our laws are old—where did they come from?
- (j) How are laws made and who make them?
 - 1. In the city?
 - 2. In the country?
- (k) Can you name any law? Give a reason for it.
- (l) Can you name a near-by town and its lawmakers?

II. How laws are made and enforced:

- (a) Who possess the right to make laws?
- (b) Whence comes that right?
- (c) How do the "people" make the laws in this country?
- (d) Will the law enforce itself?
- (e) How are laws enforced, and by whom?
- (f) What good is a law unenforced?
- (g) Do policemen make laws? Do judges? Do mayors?
- (h) What happens to those who break laws?
- (i) Who make the arrests?
- (j) Who dispose of the culprits?
- (k) What is done if one is innocent?
- (l) What is done if one is guilty? How? By whom?

- (m) Can a policeman punish a prisoner? Who can?
- (n) Is every prisoner entitled to trial before punishment?
- (o) In every city, village, town, county, State, and in the Nation at large we find three kinds or classes of public officers:
1. Those who make the laws—council, legislature, Congress.
 2. Those who say what the laws mean—judges and courts.
 3. Those who see that laws are enforced—mayor, governor, President.
- (p) These are the three branches of government:
1. The legislative or law-making department.
 2. The judicial or law-interpreting department.
 3. The executive or law-enforcing department.
- (q) Name any members of any city council. Are they chosen by all or only a part of the voters of the city?
- (r) Do you know of any bridge over which it is an offense to drive faster than a walk? What is the penalty? Who made the law?
- (s) Name an officer of the legislative department; of the judicial department; of the executive department.

III. Voters and citizens:

- (a) Who may vote in your neighborhood?
- (b) Where do they vote, and how? What is a ballot?
- (c) What is a citizen? Are you a citizen? Why?
- (d) May one who is not a citizen vote in your State?
- (e) What is an alien? How may he become a citizen?
- (f) Why do some places require voters to register? "Repeating."
- (g) Describe the ballot in your State. Is it the Australian?
- (h) How are public officers chosen in your neighborhood?
- (i) What is an election district?
- (j) Who make the best citizens? Name some.

IV. Taxes:

- (a) What are taxes? Why do we have them? On what?
- (b) Who pay the salaries of public officers?
- (c) Who pay taxes?
- (d) Who pay taxes directly?
- (e) Who pay taxes indirectly?
- (f) How are taxes laid? How are taxes collected? By whom?
- (g) Are the tax officials elected or appointed?
- (h) Is it necessary for them to be honest and competent? Why?
- (i) Should one who owns no property be required to pay taxes? Why? Give reasons.
- (j) Is it a duty to pay taxes?
- (k) What happens to those who do not pay the taxes which have been laid or assessed against them?

- (l) Name all the different taxes you can think of.
- (m) Do you pay taxes? Why?
- (n) Do your parents pay taxes? Why?

FOURTH GRADE.

I. Government in the town:

- (a) What is a town or township?
 - 1. Square? Why? How large?
 - 2. Irregular? Why?
- (b) What is a county?
- (c) Why does a town need laws?
- (d) How are town meetings held and officers chosen?
- (e) What is done when there are no town meetings?
- (f) What is direct government?
- (g) What is representative government?
- (h) What is democratic government?
- (i) Name some town officers and their duties.
- (j) Who has charge of schools in your neighborhood?
- (k) Who hires the teachers?
- (l) How are their salaries raised and paid?
- (m) How is the money gotten?

II. Government in the village:

- (a) What is a village? How does it come to exist?
- (b) Does a village have its own government? Is it governed by the township or county? Why not?
- (c) How does a village obtain its own government?
- (d) What is a charter? Who grants it? How may it be obtained?
- (e) What does a charter contain?
- (f) Describe the village.
 - 1. Lawmakers. Name some.
 - 2. Executive officers. Name some.
 - 3. Court. Name a judge.
- (g) How are improvements made?
- (h) What are some differences between good and bad municipal government?

III. City government; some things it does:

- (a) When a village or town grows into a city, how does it secure a change in government?
- (b) Why does a city need clean and well-paved streets?
- (c) Why does a city need a water supply? How obtained?
- (d) How is it secured in your neighborhood, and who owns the water system?
- (e) How are garbage and refuse disposed of in your neighborhood?

- (f) How is your town lighted?
- (g) Have you a street car system?
- (h) What is a franchise? Who grants it?
- (i) Have franchises any value? Should they be granted for nothing? Give your reasons.
- (j) Why does a city need a department of health and health officers? What are some of its officers and their duties?
- (k) Why are police protection and fire protection necessary in the city? Why does the city provide for them?
- (l) Departments of public buildings, parks, schools, and playgrounds, and give some of their duties. Name some of the officers of this nature in your nearest town or city.

IV. City government; how it is carried on:

- (a) What is a city charter? How is it obtained and who grants it?
- (b) What are some of the duties of a board of aldermen or the city council?
- (c) What officers lay taxes in a city for public improvements?
- (d) What limitation of law is there on the amount of taxes that may be thus laid?
- (e) What is a city franchise? Who grants it? For what return?
- (f) What are the duties and powers of a mayor?
- (g) What is the mayor's veto and how may it be ignored by the city council?
- (h) Tell what you can of city courts and judges in your nearest city.
- (i) What is "home rule"?

FIFTH GRADE.

I. State government; how it came about; what it does for the people:

- (a) What is the name of your State?
- (b) Give its boundaries and its capital?
- (c) Who is the governor?
- (d) What is the State? Why do we have a State government?
- (e) How are States now formed, and how are they admitted to the Union?
- (f) Is your State one of the original thirteen?
- (g) Was your State formed from territory that once belonged to the United States?
- (h) Name the Thirteen Colonies.
- (i) How did they become States?
- (j) What is the State constitution?
- (k) How was it formed; how accepted by the people?
- (l) What does the State constitution contain?

- (m) Does it contain all the laws of the State?
- (n) How are State laws not found in the constitution enacted?
- (o) Name the two houses of your State legislature.
- (p) Describe them. How are the members chosen? For how long?
- (q) What is the governor's veto?
- (r) What is meant when we say that a law is "unconstitutional"?
- (s) Who enforce the laws of your State?
- (t) Name four executive officers of your State government.
- (u) Give the duties of each.
- (v) What is the highest court in your State and where does it sit?
- (w) How many judges are on your highest State court? Are they appointed or elected, and for what terms of office?

II. Government in the State—How it is carried on—The county:

- (a) How many counties in your State?
- (b) How are they formed? How did they originate?
- (c) In England the reeve governed a shire; hence "shire-reeve" or "sheriff."
- (d) In France a count governed such a territory; hence "county."
- (e) Are your county laws made by commissioners or by a board of supervisors?
- (f) Name and locate your county seat.
- (g) Name and describe the work and duties of six executive officers of your county.

III. Government in the United States—How it came about—What it does for the people:

- (a) What do you know about the Declaration of Independence? Who adopted it; when and by whose authority?
- (b) What do you know about the Articles of Confederation? Why did they result in a weak National Government?
- (c) What do you know about the Constitution; when it was formed; by what body and how adopted?
- (d) Name four things done by the Federal or United States Government that a State may not do.
- (e) Who may carry the mail?
- (f) Who may regulate foreign intercourse?
- (g) Who may coin and issue money?
- (h) Who may make treaties?
- (i) What is a treaty, and how is it made?
- (j) What are ambassadors and consuls?
- (k) Who governs United States territory?
- (l) Name different kinds of United States money. Why is one as good as another?

IV. How United States Government is carried on:

- (a) How many branches to our Government?
- (b) What is Congress? How many Houses? How many Members? How are they chosen? For how long a period? What are the duties of Congress?
- (c) What is the presidential veto? Is it final.
- (d) What is the President and how is he chosen? For how long a period? Who is now President?
- (e) May the President ever be elected by the House of Representatives? When and how?
- (f) How many presidential electors are chosen in your State; how determined; how selected? How do they vote?
- (g) What is the President's Cabinet? How and by whom appointed?
- (h) Name the members of the present Cabinet and describe the work of each.
- (i) Who is the Vice President; what are his duties and how is he chosen?
- (j) What is the Supreme Court of the United States? How is its membership decided?
- (k) What are its duties and functions?
- (l) How does the Constitution divide the powers of government between National and State Governments?
- (m) Can the Constitution be amended? How and by whom?

SIXTH GRADE.

I. Some rights and duties:

- (a) Name some individual rights and duties.
- (b) What are the rights to life, liberty, personal security, and property? How does the Government secure these for us?
- (c) What is civil liberty? What is unrestrained license?
- (d) Can there be liberty without law?
- (e) What is the writ of habeas corpus? How and for what purpose may it be obtained? May it be suspended? How, by whom, when, and by what authority?
- (f) Are there rights without duties?
- (g) What is the duty of the citizen to his Government and vice versa?
- (h) Describe the Right of Eminent Domain.

II. Going to law:

- (a) How are property rights asserted and defended?
- (b) Describe "summons," "judgment," "default," "verdict"—what are they?
- (c) What is the trial jury—how obtained?

- (d) Name three rights of a person accused of crime.
- (e) Describe the nature, size, and duty of a coroner's jury.
- (f) Describe the nature, size, and duty of a grand jury.
- (g) Describe the nature, size, and duty of a petit jury.
- (h) Which investigate cases? Which try cases?
- (i) What is an indictment? What is bail?
- (j) What is the duty of the State attorney in a criminal suit?
- (k) Name the different courts, their duties and functions.

III. Parties and elections:

- (a) Describe parties and elections. Why do we have them?
- (b) What is the ballot? Describe the one used in your State. Tell how the names appear upon it.
- (c) How do you vote? Where? When?
- (d) What is a caucus? A primary? A convention? What are the differences?
- (e) How do parties work? What are "the boss," "the machine"?
- (f) Describe the direct primary system.
- (g) Why should officers be nominated largely at the primaries? Give also an argument against it.
- (h) How is the mayor named and elected in your city?
- (i) How is the sheriff named and elected in your county?
- (j) What is the Australian ballot?

IV. Some questions dividing the voters:

- (a) What are some of the great questions that now divide the voters or have done so in the past?
- (b) Describe the trust problem, the tariff, money question, Government ownership, disputes between capital and labor, initiative and referendum, recall.

ARITHMETIC.

The purpose in teaching arithmetic is to train pupils to a high degree of accuracy and rapidity in computation, to lead them to think clearly, to reason accurately, to inculcate habits of order, neatness, perseverance, and to lead them to acquire a knowledge of facts and affairs related to arithmetical work, so that they will be able to apply readily their knowledge of arithmetic to every-day problems of life.

Rapidity and accuracy in computation can be secured only through much practice and drill. Pupils should be required to get correct results and to detect and correct even the slightest error.

Use great care in assigning work in order to eliminate nonessentials and to complete the required work within the time limit. Impossible and improbable problems should be omitted from all topics in arithmetic.

FIRST GRADE.

(To be given with oral English and seat work.)

(a) Teach numbers and the smaller combinations with objects. Have pupils handle the objects.

(b) Teach pupils to recognize readily at sight the number for each of the figures from 0 to 9, inclusive; also to make these figures.

(c) Count to 100 and read and write numbers learned.

(d) Teach the easy combination of small numbers whose sum, product, dividend, or minuend is not greater than 12.

(e) Complete the essentials of a good number primer used as supplementary work in English.

SECOND GRADE.

(a) Review work of first grade.

(b) Counting forward and backward to 100 by 2, 3, 4, 5, and 10.

(c) Drill in use of the 45 combinations in addition and the corresponding differences.

(d) Teach $+$, $-$, $=$, and give seat work as follows:

6	5	8	9
<u>+2</u>	<u>+4</u>	<u>-5</u>	<u>-4</u> etc.

(e) Teach \times , \div , and drill in combinations to 24.

(f) Use of inch, foot, yard, dozen, pint, quart, gallon, quart, peck, bushel, in practical measurements. Have pupils use the measures.

- (g) Coins in United States money.
- (h) Days in week, weeks in month, and months in year.
- (i) Roman notation to XIII.
- (j) Telling the time of day by hours, half hours, and quarter hours.
- (k) Give easy, every-day, practical, concrete problems.
- (l) Drill thoroughly in addition and subtraction of abstract numbers which do not require "carrying" or "borrowing." If the class is bright and the teacher has time, carrying and borrowing may be taught near the close of the work for this grade.
- (m) Aim for accuracy and speed.
- (n) Give thorough drill in all combinations taught.
- (o) Complete essentials of the basic text.

How to Measure the Success of Second-Grade Work in Arithmetic.

- (a) Can pupils count accurately and rapidly to 100, as well as read and write numbers to 100?
- (b) Can they measure their own heights accurately?
- (c) Are they able to measure a quantity of potatoes or other commodities, telling the exact number of bushels and pecks?
- (d) Can they tell the time of day?
- (e) Are they able to find the day of the week and month on the calendar?

THIRD GRADE.

- (a) Review work of first and second grades.
- (b) Drill in rapid writing and reading of numbers to 100,000.
- (c) Roman notation as met with in lessons or to C.
- (d) Drill in rapid addition and subtraction of small numbers.
- (e) Addition of numbers requiring "carrying."
- (f) Subtraction of numbers requiring "borrowing."
- (g) Rapid multiplication and division tables in which the multiplier or divisor is a number from 1 to 9, inclusive.
- (h) Multiplication, using not more than three figures in the multiplier.
- (i) Addition and subtraction of United States money; also multiplication and division to \$1,000.
- (j) Buying and selling, giving attention to making and counting change.
- (k) Avoirdupois weight, and have pupils weigh each other and other material.
- (l) Continue work in dry measure, liquid measure, time, and length to 1 mile.
- (m) Square measure, including 1 square yard.
- (n) Square, rectangle, distance around each, and area.

(o) Measure objects about the classroom, school grounds, and school garden.

(p) Number of days in each month; write dates.

(q) Telling time to the exact minute.

(r) Fractional parts of 100; teach thoroughly.

(s) Reading the thermometer and keeping a daily record of weather conditions.

(t) Give practical problems applied to meet the needs of everyday life of the pupils. These problems should not have more than two steps.

(u) Have pupils make problems.

(v) Near the close of the work for this grade teachers may begin long division with easy divisors of two figures. Pupils should never be permitted to use long division when the divisor consists of one figure only.

(w) Complete essentials of the basic text for this grade.

How to Measure the Success of Third-Grade Work in Arithmetic.

(a) Have pupils mastered the multiplication table?

(b) Can pupils write and read numbers to 100,000 rapidly and accurately?

(c) Are pupils able to multiply rapidly any number to 10,000 by a digit?

(d) Are pupils able to divide rapidly any number to 10,000 by a digit? "Short division."

(e) Have pupils mastered very thoroughly the 45 combinations in addition and their corresponding differences?

(f) Are pupils able to solve original practical problems involving one and two steps?

(g) Pupils on completion of this grade should be able to add, subtract, multiply, and divide numbers with accuracy and rapidity.

FOURTH GRADE.

(a) Give frequent drills in addition, subtraction, multiplication, and division for accuracy and rapidity. Include United States money in this drill.

(b) Division of any number by any number.

(c) Review fractional parts of 100.

(d) Drill in rapid sight work in addition and multiplication.

(e) Prime factors to 100 and factoring by inspection.

(f) Easy tests for divisibility of large numbers.

(g) Cancellation as a short process of multiplication and division.

(h) Continue practical problems in measures of length, time, dry measure, liquid measure, avoirdupois weight, counting, and surface measure.

- (i) Give practical problems applied to conditions of everyday life.
- (j) Give problems that pupils meet with in their industrial and farm work.
- (k) Cubic measure.
- (l) Area of rectangles and volumes of rectangular solids.
- (m) Change fractions to equivalent higher and lower term.
- (n) Least common multiple and application in reducing fractions to a common denominator.
- (o) Give concrete and abstract work in addition and subtraction of fractions.
- (p) Addition and subtraction of mixed numbers. Never reduce mixed numbers to improper fractions in addition or subtraction.
- (q) Multiplication of—
 - 1. A fraction by an integer.
 - 2. An integer by a fraction.
 - 3. A fraction by a fraction.
 - 4. A mixed number by a mixed number.
- (r) Division of—
 - 1. An integer by a fraction.
 - 2. A fraction by an integer.
 - 3. A fraction by a fraction.
 - 4. A mixed number by a mixed number.
- (s) Oral analysis.
- (t) Have all written work preceded by much oral drill to fix correct habits in thinking.
- (u) Bills, simple accounts, and receipts.
- (v) Original problems by pupils, by teacher.
- (w) In concrete problems be sure that pupils understand the meaning of each before attempting to do the mechanical work; this saves much time and worry.
- (x) Complete the essentials of the basic text.

NOTE.—In teaching fractions use no denominator larger than 16.

How to Measure the Success of Fourth-Grade Work in Arithmetic.

- (a) Are pupils able to add, subtract, multiply, and divide fractions accurately and readily?
- (b) Are pupils able to solve, readily, problems in practical measurements taught?
- (c) Can pupils make out a bill of goods, and, upon payment, receipt it properly?
- (d) Can pupils measure garden plats and mark rows and spaces for planting?
- (e) Have pupils acquired facility in the use of the ruler in determining dimensions to the fraction of an inch?

FIFTH GRADE.

- (a) Reading and writing decimals.
- (b) Changing decimals to common fractions and common fractions to decimals.
- (c) Master fundamental operations of decimal fractions.
- (d) Give frequent drills in addition, subtraction, multiplication, and division of fractions.
- (e) Review tables of linear measure, square measure, cubic measure, and make direct application to papering, plastering, painting, carpeting, excavations, masonry, hay in stacks and barns, capacity of bins, cisterns, silos, etc.
- (f) Review tables of weight, dry measure, liquid measure, time, circular measure, and apply to practical problems as writing recipes. Take one-half the amount of each quantity in the recipe. Double the amount of the recipe. Measure vegetables, etc.
- (g) Other tables may be referred to, but pupils should not be required to commit tables.
- (h) Continue practical problems in bills, accounts, receipts.
- (i) Teach pupils to keep a cash account.
- (j) Applied original problems by pupils; by teacher.
- (k) Have pupils plan the furnishing of a house containing kitchen, living room, hall, parents' room, boys' room, and girls' room. List all articles to be purchased, and to be made and the cost of each.
- (l) Make out a bill for groceries to keep a family of four for one month
- (m) Complete the essentials of the basic text.

How to Measure the Success of Fifth-Grade Work in Arithmetic.

- (a) Have pupils mastered the four fundamental operations in decimals?
- (b) Are pupils able to make direct application of measures to finishing and furnishing a home, to gardening, to cooking, to sewing?
- (c) Can they keep a cash account?
- (d) Can pupils take one-half of, a quarter of, or double the amount of a recipe or tables of quantities of seeds for stated areas?

SIXTH GRADE.

- (a) Review work in common and decimal fractions.
- (b) Give special attention to finding—
 1. A fractional part of a number.
 2. What fractional part one number is of another.
 3. The whole number when a fractional part of a number and its relation to the number is given.
- (c) Review denominate numbers and drill in problems applied to home, farm, and shop.

(*d*) Relate pupils' knowledge of common and decimal fractions to percentage.

(*e*) Review thoroughly the aliquot parts of a unit.

(*f*) Teach thoroughly the three fundamental processes in percentage, to find—

1. Any per cent of any number.

2. What per cent one number is of another.

3. The number of which a given quantity is a stated per cent.

(*g*) Application to practical problems.

(*h*) Buying and selling at marked-down prices, at a profit; at a loss. Trade discounts. Cash discounts.

(*i*) Money at interest on time loans or deposits.

(*j*) Money at interest in savings banks.

(*k*) Promissory notes. Bank discount.

(*l*) Taxes, property—real and personal; income.

(*m*) Insurance on property.

(*n*) Commission, using only practical problems.

(*o*) Complete the essentials of the basic text.

How to Measure the Success of Sixth-Grade Work in Arithmetic.

(*a*) Are pupils able to work rapidly and at the same time carefully?

(*b*) Have pupils learned to master the meaning of a problem before beginning the mechanical operations?

(*c*) Have they attained a high standard of accuracy?

(*d*) Are they able to use short cuts which they have learned?

(*e*) Are pupils able to make out an account between a merchant and themselves and to receipt it properly when paid?

(*f*) Are they able to compute interest on deposits in a savings bank?

(*g*) Have pupils acquired a knowledge of measures and percentage, also of facts and affairs of everyday life, so that they can make direct application to meet the common arithmetical problems in the home, farm, and shop?

PENMANSHIP.

Use one of the muscular-movement systems listed on annual estimate of goods and supplies.

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DRAWING.

It is not intended that this outline be followed in detail. Remember that it is the child and not the course of study which is being taught. Teachers should use judgment and common sense in selecting material suitable to local conditions.

The selection of pictures for schoolroom and home decorations is an important subject in the drawing course; therefore a number of pictures are suggested for students in each grade. Pupils should be taught which are good and why, and should be made familiar with as many of the best pictures as possible. This work might be extended to architecture.

Teachers should correlate drawing with the other subjects of the course and not confine it to the period assigned to drawing. English lessons on nature should be illustrated by drawings of plants, animals, etc. In arithmetic constructive designs are very helpful. Designs, plans, and working drawings for shop and farm should be a part of the course in drawing.

Drawing can and should be used in connection with all the different subjects and courses.

FIRST GRADE.

FALL.

Drawing and painting:

Use pencils, water colors, or crayons.

Grasses, sedges, leaves, trees, cat-tails, simple flowers.

Fruit, separately or in clusters.

Landscape—sky and land, flat washes.

Emphasize direction and character of growth.

Strive for keen observation.

Teach "taste" by making a pleasing arrangement of drawing on oblong paper, and by trimming paper judiciously.

Imaginative drawing:

Have pupils illustrate things suggested by the holidays and seasons and by lessons in English, as "pumpkins," "turkeys," "wigwam," "going to school," "see saw," "jumping rope," etc.

Color:

Teach color names, *red, orange, yellow, green, blue, violet*, by using a glass prism throwing the colors upon the wall. Have pupils

imitate the colors with water colors. Avoid the use of too many colors. Tell the story of the "rainbow."

Construction:

Illustrate Columbus day; make Halloween cards, jack-o'-lanterns, Thanksgiving decorations; illustrate, with Dutch scenes, Pilgrim life and present-day customs. Cut out designs and tint with water colors.

Picture study:

First Steps, Millet.

Interior of a Cottage, Israel.

Hiawatha, Norris.

Caritas, Thayer.

WINTER.

Drawing and painting:

Objects suggested by Christmas, New Years, Lincoln's and Washington's birthdays.

Draw simple objects and use as motifs for borders as well as for decoration of work in construction. Colored designs may be cut out and used to illustrate work in written English.

Landscape—sky, snow, mountains.

Imaginative drawing:

Animals and people in action, suitable to the season and holidays. Illustrate words, phrases, etc., from English lessons.

Examples: "Coasting," "skating," "snow man," "a ship," "hunting," "rabbits," etc.

Construction:

Make things for Christmas, New Years, Lincoln's Birthday, Valentine day, Washington's Birthday.

Decorate with pencil and water colors.

Picture study:

Madonna of the Chair, Raphael.

Mother and Child, Brush.

Holy-Night, Correggio.

Village Choir, Lins.

Angels' Heads, Reynolds.

SPRING.

Drawing and painting:

Spring buds, pussy-willow branches, grasses, spring flowers, birds, etc.

Use simple nature units for simple designs.

In designs, emphasize the effect of regular spacing.

Landscape, suggested by the season, sky, river, hillside, and trees.

Imaginative drawing:

Things suggested by the season, and English lessons, as "games," "washing day," "an April shower," "driving a hoop," "playing ball," "flying a kite," "a windmill," "boats," "fishing," etc.

Strive for free imagination and definite expression.

Construction:

Design, make, decorate with water colors things suggested by the season, Easter, May Day, Memorial Day, Arbor Day.

Make calendar for the spring months.

Picture study:

Before the Storm, Dupré.

Piper and Nut Crackers, Landseer.

Two Families, Gardner.

SECOND GRADE.**FALL.****Drawing and painting:**

Flowers, leaves, seed pods, cat-tails, trees, vegetables, fruit.

Cultivate "taste" by simple artistic arrangement of fruit and leaves within a frame.

Designs for decorating articles to be made for special days.

Landscape, autumn with plain and clouded sky, fields, road, distant trees in background. (Sunset sky may be used.)

Imaginative drawing:

Illustrate games, stories, and things suggested by the season, and holidays.

Color:

Continue teaching standard colors and combinations for coloring in flat washes, fruit, leaves, flowers, landscapes, etc.

Construction:

Make posters, cards, etc., for Columbus Day, Halloween, Thanksgiving, Labor Day.

Picture study:

Feeding Her Birds, Millet.

The Drinking Trough, Dupré.

The Cat Family, Adam.

WINTER.**Drawing and painting:**

Objects suggested by winter, Christmas, New Years, Valentine Day, Lincoln's and Washington's birthdays.

Designs for borders, using mechanical figures, animals, and flowers as motifs for units.

Landscapes suggesting winter, sky, snow, bare trees in foreground, road and mountains in the distance.

Japanese lanterns in gray and natural colors.

Imaginative drawing:

Illustrate familiar stories, games, plays, posters, and cards for special festivities.

Illustrate booklets for Lincoln's or Washington's birthday.

Construction:

Make posters, special cards, invitations, etc., for special days.

Landscape calendars, blotter covers, valentines.

Picture study:

Divine Shepherd, Murillo.

Little Samuel, Reynolds.

Dignity and Impudence, Landseer.

Shoeing the Horse, Landseer.

SPRING.**Drawing and painting:**

Subjects in color appropriate for the season, Easter, Arbor Day, May Day, Memorial Day.

Draw spring flowers and color them.

Draw butterflies, toads, birds, and color them as true to nature as possible.

Study spring landscapes, sky, road, hill, and trees, and village in distance.

Begin the study of values in color.

Imaginative drawing:

Occupation, spring games, circus parades, different ways of travel, rainy days, overall boys, sunbonnet babies, familiar stories, words, phrases, and sentences from other lessons.

Construction:

Make Easter cards, special programs, and invitations to parents for special days.

May baskets, constructed and decorated.

Picture study:

Out for a Sail, Walden.

Mother and Child, Toulmouche.

Strawberry Girl, Reynolds.

THIRD GRADE.**FALL.****Drawing and painting:**

Make sketches of fruit, games, seed pods, flowers, branches of fruit, vegetables, and their grouping. Paint in two tones of gray, then in natural colors.

Landscape, autumn scenes, with clouded sky or sunset.

Imaginative drawing:

Playground sports, fairy stories, English lessons, posters, or booklets for one of the holidays.

Color:

Continue work in standard colors. Make a color scale. Teach application of two tones of gray and combination of standard colors to bring out the natural colors of lessons in drawing and painting.

Construction:

Calendars illustrated, decorated book marks, and blotter covers, Indian designs for bobbin lace.

Picture study:

Can't You Talk? Holmes.

Pilgrims Going to Church. Boughton.

Children at Work. Geoffrey.

Who'll Buy a Rabbit? Meyer von Bremen.

WINTER.**Drawing and painting:**

Figure studies, action and proportion.

Study type solids; sphere, cube, prism, cylinder, pyramid, cone.

Draw select objects representing the different types. Use of table line.

Draw animals at rest and in action.

Designs, decorative and borders, for construction work.

Landscape, winter scenes.

Imaginative drawing:

Illustrate stories, winter sports, personal experiences.

Construction:

Indian designs for bobbin lace, Irish crochet, fillet, basket, rugs, mats, cushions, etc.

Working drawings for things to be made in the work shop.

Printing to be used on construction work.

Simple straight-line printing.

Picture study:

Sistine Madonna. Raphael.

Shepherd and His Flock. Bonheur.

Angel and Mandolin. Carpaccio.

An Old Monarch. Bonheur.

Members of the Humane Society. Landseer.

SPRING.**Drawing and painting:**

Single flowers, several flowers artistically arranged, sprays of leaves, branches of buds, familiar birds, butterflies, frogs, insects, etc.

Menu cards for holidays.

Landscape, spring scenes, water scenes with boats, with or without clouded sky or sunset.

Imaginative drawing:

Illustrate lessons in English, spring games, quotations, personal experiences.

Construction:

Plans for school and home gardens, of school yard, of school building.

Designs for industrial work.

Picture study:

Girl with Cat, Hoecker.

, Three Children of Charles I, Van Dyck.

Return to the Farm, Troyon.

Saved, Landseer.

The Butter Maker, Millet.

FOURTH GRADE.

FALL.

Drawing and painting:

Sketch sprays with flowers, leaves, branches with fruit, vegetables, vases with flowers, birds and insects, use water color in tones of gray and in natural colors.

Landscape—fields, trees, mountains in the distance, with autumn colors.

Imaginative drawing:

Illustrate reading lessons.

Posters or booklets for use on the holidays.

Construction:

Make designs for borders, corners, and all-over designs from flowers, seed pods, etc.

Make designs for laces, pottery, baskets, etc.

Picture study:

Sir Galahad, Watts.

A Karyl, Schreyer.

Brittany Sheep, Bonheur.

Three Members of a Temperance Society, Herring.

WINTER.

Drawing and painting:

Vases, cups, saucers, jugs, pitchers, animals.

Printing for decorative purposes.

Landscape, winter scenes.

Imaginative drawing:

Illustrate written lessons; poetry.

Designs for posters, calendars, etc.

Construction:

Designs for mats, rugs, baskets, cushions.

Working drawings for industrial classes.

Picture study:

Return of Fishing Boats, Mesdag.

Vikings, Douglas.

Arrival of the Shepherds, Lerolle.

Madonna of the Chair, Dagnan-Bouveret.

SPRING.**Drawing and painting:**

Plants, animals, etc., for design.

Landscape suitable to the season—houses or church spire in the distance; tree, road, and water in the foreground.

Imaginative drawing:

Illustrate games, poems, suitable to the season.

Construction:

Make designs for lace, baskets, pottery, etc.

Make working drawings for industrial period.

Picture study:

The Balloon, Dupré.

Spring, Corot.

Dancing Children, Robbia.

Potato Planting, Millet.

FIFTH GRADE.**FALL.****Drawing and painting:**

Leaves, animals, flowers, fruit, using pencil and water colors, giving special attention to foreshortening of leaves and flowers.

Landscape suitable to the season.

Imaginative drawing:

Illustrate school activities, choice selections, lessons in English, and other lessons.

Construction:

Designs for industrial work for girls.

Working drawings by the boys for use in their industrial classes.

Picture study:

The Rainbow, Millet.

The Shepherdess, Lerolle.

Autumn, Mauve.

End of Day, Adan.

WINTER.

Drawing and painting:

Animals, homes of animals, and different races of people.

Landscape suitable to the season.

Motifs, Indian, apply to industrial work.

Imaginative drawing:

Illustrate lessons and make cartoons of athletic sports.

Construction:

Patterns for girls' industries.

Working drawings for boys' industries.

Picture study:

The Angelus, Millet.

Good-Night, Toulmouche.

Oath of Knighthood, Abbey.

The Holy Family, Murillo.

SPRING.

Drawing and painting:

Still life, from nature, giving special attention to complementary colors.

Landscapes and water scenes suitable to the season.

Imaginative:

Reading lessons, special occasions, holidays.

Construction:

Motifs from Indian idea of nature, life, etc., applied to designs for lace, basketry, pottery, etc.

Working drawings for boys' industries.

Drawing and patterns for girls' industries.

Picture study:

Song of the Lark, Breton.

Melon Eaters, Murillo.

Children Playing Cymbals, Robbia.

The Gleaners, Millet.

SIXTH GRADE.

FALL.

Drawing and painting:

Flowers, seeds, fruits, vegetables, still life, giving special attention to foreshortening and giving depth to the picture. Study high lights and shadows.

Landscape and water scenes suitable to the season.

Free-hand lettering for decorative purposes.

Imaginative drawing:

Illustrate lessons, athletic events, poems, short prose selection, or booklet for one of the holidays.

Construction:

Designs for girls' industries.

Designs for boys' industries.

Articles for special occasions.

Picture study:

By the River, Lerolle.

Dance of Nymphs, Corot.

Queen Louise, Richter.

Pilgrim Exiles, Boughton.

WINTER.

Drawing and painting:

Still life, animals, single or in groups, vases, jars, books, chairs, tables, glasses, cups and saucers, bowls, etc., giving special attention to bringing out the third dimension.

Landscape suitable to the season.

Imaginative drawing:

Monograms, idea of nature, life, the elements from the old Indian's point of view.

Construction:

Indian designs for industrial work for both boys and girls.

Working drawings for industrial work.

Picture study:

Fog Warning, Homer.

Woman Peeling Apples, Ter Borch.

Repose in Egypt, Van Dyck.

Christ and Doctors, Hoffman.

SPRING.

Drawing and painting:

Motifs of buds, flowers, leaves, geometrical figures for all-over designs, corners, and borders.

Draw animals, birds, insects, butterflies, etc.

Landscape suitable to the season.

Imaginative drawing:

Draw from memory animals, birds, flowers, etc.

Illustrate magazine covers, posters for advertising boots, shoes, dry goods, etc.

Construction:

Designs, Indian, for girls' industries.

Working drawings for boys' industries.

Picture study:

The Mill, Ruysdael.

The Sowers, Millet.

Oxen Going to Work, Tyron.

NOTE.—While the cultural value of this course is not overlooked, it is intended chiefly to develop manual dexterity and to prepare for the vocational courses.

MUSIC.

As a means for training the senses tone study has no rival, because it synchronizes so many of them; in fact, the power of discrimination thus brought to eye, ear, and deeper sensory perception is beyond that produced by any other single subject of instruction. Any scheme of education which fails to appeal to develop all the powers and functions of the human mind or which does not direct their use in ways enjoyable to the individual and helpful to the community misses its aim. Music opens the way to a new world of joy.

The first requirement for musical training in the schoolroom is to permit the pupils to hear only good music, aiming constantly in this way to develop musical appreciation. This requires a great deal of skill in the selections, since "rag time" has such a hold on the average individual. The operas and oratorios offer many beautiful and not really difficult suggestions. The waltzes from "Faust," "Traviata," "Tales of Hoffman," etc., and marches from "Lohengrin," "Aida," "William Tell," "Rigoletto," "Gioconda," "Tannhauser," etc., will always be enjoyed and may often be used for rhythmic drills.

In selecting songs for the different grades, and particularly for special occasions, preference should be given to those not under the standard set above, such as "Morning Prayer," by Haydn; "May Songs," by Mozart; "Where Daylight Fades Away," by Beethoven; "Home to Our Mountains," from *Trovatore*; "Over the Summer Sea," from *Rigoletto*; also the best-known choruses from oratorios and operas, as "The Heavens Are Telling," from the *Creation*; "Soldiers' Chorus," from *Faust*; "The Hallelujah Chorus," from the *Messiah*; "Good Night," from *Martha*; "Faithful and True," from *Lohengrin*; "Miserere," from *Trovatore*.

Patriotic songs, as "The Star-Spangled Banner," "Columbia, the Gem of the Ocean," and "America" should, of course, receive special attention. The pupils should be able to sing them from memory and at call on any occasion.

The aim of this course is to lead children to an interest in singing, to preserve the child voice, to secure the ability to read music at sight, to develop the power to render it correctly and pleasingly, and to cultivate enjoyment and appreciation of good music.

GENERAL DIRECTIONS.

In class singing strict attention should be given to the following:

- (a) Always insist on a good, smooth, sweet, light, pure tone.

(b) Insist upon prompt and even "attack"; do not permit raggedness and uncertainty in beginning.

(c) Give attention to expression, breathing, and distinct phrasing.

(d) Pronounce all words clearly, so that a listener can understand them.

(e) In teaching pupils to read music, do not have them sing the same song over and over again. Give them something new; do not kill interest and spontaneity by monotony.

The following outline is suggestive only. In many cases it may have to be abridged or adapted, since it often happens that a number of grades must be taught together. Success will depend as much upon carefully planned and prepared lessons as upon the ingenuity of the teacher.

(a) Great care should be taken to give the right pitch and to have the class reproduce or sound it correctly. Time is equally important. The pupil must perfectly understand the tempo before starting an exercise.

(b) In the lower grades especial attention must be given to the elimination of monotones, and a great deal of individual work will need to be done. In nearly all cases, if the work is done carefully, the ear can be trained. This, however, must be done in the first and second grades. Here the foundation must be laid.

(c) Breathing exercises: Develop deep breathing through the imagination by sighing for expiration and smelling for inspiration.

(d) Vocal drills: Teach the proper mouth formation necessary for the production of a pure, bright, buoyant head tone, using such vowel sounds as "oh," "oo," "ah," "aw," "ee," "u"; also use the syllables "tee," "nee," "pro," "mo," "no"; words also may be used. Have the pitch high with the tone apparently located in the front portion of the mouth.

(e) Exercise for preventing huskiness—humming.

(f) Ear training: Recognition of musical effects is the first step in musical training and should continue through every grade. The steps to be considered are:

1. Imitation.

2. Distinction (difference between intervals).

3. Representation (placing on staff what is heard).

(g) Interval drill: All interval drills should be light and rapid. Use those intervals indicated on the outlines or the difficult parts of an exercise. The best time for this kind of work is the first part of the period right after the vocal drill.

(h) Enunciation: Drill on the consonants, combining them with the vowel sounds "ah," "oh," and "oo." Intone syllables. Exemplify words with singing tones.

(i) *Rhythm*: In the first three grades a great deal of rhythm work should be done. The children may mark the time on their desks, in the air, or on the board in the manner indicated in the outline. Whenever motions suggest themselves to the teacher they may be given to the children in correct time. The pupils should be allowed to use their arms and bodies freely in acquiring the feeling of rhythm.

(j) *Gesture*: Exemplify in dramatization, games, motion songs, plays for costuming; avoid exercises that are strenuous and noisy.

(k) *Songs*: Short, fresh, musical rote songs, in concert and individually. Greeting songs, calling songs, morning or evening songs, nature songs, boating songs, songs from Mother Goose, nonsense jingles, etc. Teach words and music simultaneously, phrase by phrase.

(l) *Story*: To be told to the pupils by the teacher. Select stories of great musicians, great musical events, or great musical numbers.

(m) *Written work*: The practice work for the ear training should be rapid and frequent, also the drill in placing notes in a new key. The formal written lessons and examinations, however, should be at stated intervals. In the latter great care should be taken with all details, making the clef, sharps, flats, and notes.

FIRST GRADE.

The aim in this grade should be to train the voice and ear. This is done mainly by imitation, in taking up the rote songs. Individual work should be done with every pupil. Vocal drills, simple interval work, and rhythm exercises are given in connection with the songs. The interval work at first is sung entirely with "loo" or "la," later with the words. Rhythm exercises by note in the different kinds of time are taken first, then later this work is applied to the rote songs. Simple exercises and note songs are taken up the last three months of the year. There are many beautiful songs suitable to the age of first-grade pupils affording exercises in ear training, rhythm, and the cultivation of sweet and truly musical voices. Use songs of nature, seasons, trades, games, home, etc. All selections used should be melodious, yet simple in tonality, limited in range, but distinct in rhythm. In all musical exercises of the lower grades give especial attention to:

Quality of the voice: Secure bright, clear, sweet tones of rather high pitch.

Rhythm: Establish accent by clapping hands, tapping on desk, mark time to count, marching, making long and short lines on black-board, making imaginary lines, gesture, dance movements (folk dances and games).

Ear training: Calls of street, home, children's names, sounds of nature in wood, plain, or water; sing scale songs with words; sing

scale by "loo" and syllables; sing scale in relation to 8, also in relation to 1; sing tones of tonic chord; teach half and quarter notes; teach staff by simple devices; use musical games to test ability of children; individual work with monotones, humming.

By the end of the first year the pupil should be familiar with the scale in several positions on the staff and he should sing freely any simple tone combination at sight. He should recognize the scale when he hears it. He should be able to give the syllable named to simple tone combinations which the teacher sings to him. His experience in song singing should be rich and varied. Those songs which each child likes best should be his personal repertoire for individual singing.

SECOND GRADE.

The rote song is continued; also the work of the first grade in vocal, interval, ear training, and rhythm drills. Exercises and note songs are taken during the entire year. The keys of C, G, and F are particularly studied; the children are taught to name the lines and spaces, and place the scales on the staff.

Develop deep breathing through the imagination such as smelling for inspiration and sighing for expiration, etc. Do this with and without arm movements; also while sitting and while standing.

Cultivate intent listening through imitative work. Show relation of song and speech by greeting pupils, calling their names, tone matching, etc. Show that musical pitch and varying pitch in speaking rob speech of monotony and add interest, pleasure, life, and expression to speaking.

Use chart and blackboard for drill in recognition work.

Have children sing from scale ladder, hand staff, or motion of hand.

Have children read simple phrases from staff in different keys and time.

Make transition from board to book, placing melody on board and then singing from the book.

Secure good quality of voice at all times. Give pitch frequently and softly. Have individual work frequently.

THIRD GRADE.

Vocal, interval, ear training, and rhythm drills are continued. Interval work is mainly based on songs and exercises. Sight-reading exercises, studies, and songs are taken up.

Pupils should be able to sing at sight simple songs and exercises, to define nine keys, to tell the meaning of time signatures, to mark the rhythm, to write intervals and scales.

Develop musical thought. Note the emotional characteristics, rhythm, tempo, length of tones, relative pitch, etc. Emphasize expression.

Teach names of lines and spaces of the staff; the keys c, f, g, d, and b flat; notes and rests—whole, half, quarter, and dotted; and time—double, triple, and common time.

Have rapid interval drill from board, chart, and book. Drill on tonic, dominant, and subdominant chords. Continue individual work. Give especial attention to untrue voices.

The use of "rounds" may be begun.

FOURTH GRADE.

Vocal, interval, ear training, and rhythm drills continued.

Study of intermediate tones is begun.

A great deal of rapid written work is done.

Two-part work is begun.

Continue drills on chords as set forth for third grade. Give especial attention to untrue voices.

Read phrases or groups of notes with "loo" or "la" to teach tone of musical memory. Write from memory.

Read phrases or groups of notes with "loo" or "la" to teach tone groups.

Teach the staff, the bar, the clef, keys, etc., and have pupils write same, also have them write short musical phrases.

Introduce two-part music by using the tones of a chord; teacher may sustain a tone while the pupils sing the tones of the chord. Sing simple exercises in two parts, having all pupils learn to sing both parts.

Interval work and other drills continued; give much rapid, skipping interval practice.

Intermediate tones and chromatic scale.

Much two-part and some three-part work.

Marks of expression.

Singing simple selections in a more "finished" manner.

Names of notes on lines, spaces, and added lines and spaces on the staff.

Both clefs D, C, fine, repetition marks.

All kinds of notes, rests, and measures.

Rhythm and contracts in rhythm.

The beat, multiple beat, and divided beat.

Written work continued.

Sight reading, give abundant exercise.

Keys to four sharps and four flats.

FIFTH GRADE.

Interval work and other drills continued; give much rapid, skipping interval practice.

Intermediate tones and chromatic scale. Much two-part and some three-part work.

Marks of expression.

Singing simple selections in a more "finished" manner.

Names of notes on lines, spaces, and added lines, and spaces on the staff.

Both clefs D, C, fine, repetition marks.

Rhythm and contrasts in rhythm.

The beat, multiple beat, and divided beat.

Written work continued.

Sight reading, give abundant exercise.

Keys to four sharps and four flats.

SIXTH GRADE.

Continue interval and other drills.

Chromatic scale continued and intermediate tones. Minor scales begun.

Songs and exercises in both two parts and three parts.

Study the bass clef.

Emphasize thought, feeling, and expression.

Syncopated rhythm. Explain its relation to "rag time" and to poor musical taste and a low sense of musical appreciation.

Write the major scales and chromatic scale in the keys of c, f, and g.

Sustain interest by exact and rapid drill in careful and systematic work in all that has been taught hitherto.

Encourage instrumental work. Use the phonograph to develop and cultivate a taste for the best in musical appreciation.

Give short musical programs or recitals quarterly.

MANNERS AND RIGHT CONDUCT.

Outlines for this subject are in preparation and will be included in the corrected and complete edition of this course of study. In the meantime teachers should use the textbooks on the authorized list.

PHYSICAL TRAINING.

In outlining a course for physical training it is better to plan the work to meet the nascent stages of the pupils than to arrange it according to the academic grades. Instructors should give those exercises and games that meet the needs and wants of their pupils.

It should always be kept in mind that the object of physical training is to meet the needs of all pupils and not the few who are athletically inclined. The legitimate needs of the pupils may be enumerated under three headings, namely:

(a) Body—better health, better physique, greater strength proportionately distributed, poise, ease and grace of movement, and recreation.

(b) Mind—judgment, firmness, quickness of decision, obedience, alertness, attention, imitation, quickness of perception, rapid coordination between mind and body.

(c) Moral—courtesy, honesty, loyalty, chivalry, kindness, sympathy, clean sport, fair play, self-control, self-reliance.

The great value of physical training is now being recognized in the public schools throughout the world and was recognized early by the Germans, for in 1796 a German author said, "Gymnastic sports are possessed of something so grand, are so heart cheering, have such power of influencing national thought, to lead and guide the nation, to influence the people with patriotism, have such power to develop their sense of justice, to raise their standard of virtue, and to diffuse even among the lowliest classes a certain degree of culture, that I do not hesitate to declare them one of the nation's best means of education."

In beginning physical training in the classrooms it is advisable to arrange pupils in the room, drilling them in sitting, rising, standing, and resting positions and positions of the arms.

Whenever the weather permits, the pupils should be given the benefit of having all drills, marches, games, etc., out of doors.

There is no better means of arousing sluggish children than a good, brisk, short drill out of doors. Headaches may often be cured in this way.

If gymnastic exercises, games, etc., are given indoor, after the first exercise monitors should open doors and windows in such manner as

not to permit a draft to strike any pupil, and close them while the pupils are being seated after the last exercise.

All marching and facing used in dismissals, changing classrooms, assemblies, etc., should be in accordance with the United States Army drill regulations.

GROUP I (AGES 6 TO 9).

Teach sitting, standing, and resting positions; positions of the arms; and the necessary commands as attention, forward, march, halt, position.

Stress should be placed on forming and fixing correct habits of breathing, walking, standing, and sitting.

Give breathing exercises. All breathing exercises should be given slowly.

Daily practice should be given in the setting-up exercises used by the United States Army. These exercises may be supplemented by suitable drills from authorized physical training manuals.

Give drills in marching. Use United States Army drill regulations.

Strict attention should be given to exercises for the correction of physical defects.

Give gymnastics for the development of the different parts of the body.

Suitable environment should be provided for free, active, and imitative plays, as follows:

Running.	Climbing.
Swinging.	Jumping.
Teetering.	Hopping.
Balancing.	Wrestling.
Tumbling.	Sliding.
Skating.	Wading.
Swimming.	Horse.
Soldier.	Expressmen.
Cowboy.	Store.
School.	Doll play.
Calling.	Party.

In a sand pile, making caves, hills, rivers, farms, villages, etc.

Games of experimentation, of chasing, throwing, hunting, etc., as—

Jumping rope.	Pussy wants a corner.
Hopscotch.	Going to Jerusalem.
Cat's cradle.	Tap.
Stagecoach.	Driving hoop.
The belled cat.	Relay races.
Simon says "Thumbs up."	Town ball.
Guess.	Baseball.
Odd or even.	Bean-bag games.
Pom-pom pull away.	Poison, or cushion dance.
Drop the handkerchief.	Jackstones.

Hunt the key.
 Blindman's buff.
 Ruth and Benjamin.
 Button.
 Identification.
 Cat and mouse.
 Tag.
 Prisoner's base.

Follow the leader.
 I spy, or hide and seek.
 Deer.
 Catch ball.
 Arch ball.
 One old cat.
 Football.
 Ring toss.

Singing games appeal to this group. Examples:

When I was a shoemaker.
 Did you ever see a lassie?
 The farmer in the dell.
 Looby Loo, or shaker song.
 Charlie over the river.

How we go round the mulberry bush.
 London bridge.
 The jolly miller.
 Green gravel.

Individual athletics for bar competition. (See p. 123.)

Apparatus for unsupervised and supervised play:

Sand pile.
 Seesaw.
 Pole swing.
 Traveling rings.
 Flying rings.
 Climbing pole.
 Climbing rope.
 Climbing ladder.
 Teeter ladder.
 Slides.

Jumping pit.
 Jumping ropes.
 Balls.
 Bean bags.
 Rings for ring toss.
 Sleds for coasting.
 Parallel bars.
 Horizontal bars.
 Swimming and wading pool.

GROUP II (AGES 10 TO 13).

Drill in the different positions suggested in Group I.

Breathing exercises daily. When necessary to give them indoor, see that the room is ventilated thoroughly.

Daily drill in setting-up exercises, supplemented by other drills for development.

Marching: Follow regulations of United States Army.

Dumb-bell and wand drills.

Free gymnastics for the correction of common physical defects of the head and neck, shoulders, spine, flat chest, waist, hips, arms, leg, thigh, weak back, etc.

Suitable space and equipment should be provided for free active plays, and for games of running, jumping, throwing, chasing, etc.

Swimming.
 Jumping.
 Skating.
 Coasting.
 Fox and farmer.
 Relievo.
 Follow the leader.

Hare and hounds.
 Potato race.
 Wheelbarrow race.
 Arch ball.
 Basket-ball relay.
 Crab relay.
 Broad-jump relay.

Pick-a-back relay.
 Pull up.
 Volley ball.
 Basket ball.
 Dodge ball.
 Quoits.
 Kick ball.
 Leap frog.
 Prisoner's base.
 Hill dill.
 North and south.
 Fox.
 I spy.
 Bull in the ring.
 Tag games.

Racing.
 Obstacle race.
 Indian wrestling.
 Ball-passing relay.
 Tag of war.
 Hopping relay.
 Double relay.
 Rooster fight.
 Wand wrestling.
 Baseball.
 Town ball.
 Keep ball.
 Shinnery.
 La crosse.
 Putting shot.

Intellectual games. (See any good author.)

Singing games.

Comin' Through the Rye.
 Dan Tucker.

The Miller.
 Windmill, etc.

Individual athletics for bar competition. (See p. 123.)

Apparatus for unsupervised and supervised play:

Parallel bars.
 Vaulting standards.
 Climbing rope.
 Trapeze.
 Flying rings.
 Traveling rings.
 Jumping standards.
 Volley ball, court.
 Basket ball, court.
 Ring toss.
 Tennis court.
 Slides.
 Skates.
 Jumping place.

Horizontal bar.
 Vaulting pole.
 Climbing pole.
 Rings.
 Ladder.
 Sliding poles.
 Giant stride.
 Baseball diamond.
 La crosse course.
 Quoits.
 Croquet set.
 Sleds.
 Running track.
 Swimming pool.

The playground should be well equipped with good apparatus.

GROUP III (AGES 14 AND UPWARD).

Drill in position of arms and in commands. Cultivate a strong clear voice in giving commands and give decisive commands.

Dumb-bell, wand, and Indian club drills.

Breathing exercises daily.

Setting-up exercises should be given daily, which may be supplemented by other drills for the development of the different parts of the body.

Marching—use United States Army regulations.

Give free gymnastics for the correction of physical defects of the head and neck, flat chest, spine, shoulders, hips, waist, arms, leg, thigh, weak back, etc.

Many of the games of the former group may be continued in this group. Use those games which appeal to the pupils.

GROUP COMPETITIVE GAMES.

Pupils in this period prefer competitive team games. Play regular schedules of group games which include all pupils in the school. Divide into balanced teams.

Group athletics is simply a form of competition by which every pupil who is physically fit (this to be determined by the physician) may enter any game or event, and feel, if he does his part, that he is helping his team to win, even though he may not excel in that particular event. Records are made or trophies are won not by an individual member of a team but by aggregate or average records of the entire team. This form of athletic games does away with the common objection that athletics provide only for the expert, because group events reach the student who does not usually take part or wants to take part, and by team spirit forces him by being a member to train conscientiously to do his very best to win.

For the success of physical training and group competitions it is necessary to have organized, enthusiastic, cooperative effort of the superintendent and all employees, plus as much technical knowledge, skill, and apparatus as can be obtained. It is astonishing what can be achieved through enthusiasm, cooperation, organization, and common sense.

The value of group competitive games over others lies not in the special development of a single individual or a few individuals, but in the general development of all the pupils in school.

They also develop leaders by having the captains of the different teams call for volunteers to organize each game in the series.

Play group competition games to a definite schedule, having separate schedule for boys and girls; all pupils should be organized in teams and play regular schedules. On the completion of a schedule a new organization of teams may take place for the next schedule. Keep teams evenly balanced and competition will be much keener. No schedule should extend over a period of more than two months. Have names for the teams, historical or otherwise appropriate, or use colors.

Select games that require planning, managing, and effort to overcome obstacles, for they are the games of real worth, as they afford an opportunity to use the mind as well as the muscles. Examples:

Ball-passing relay.

Tug of war.

Crab relay.

Broad-jump relay.

Hop, skip, and jump relay.

Wand wrestling.

Pull up.

Arch ball.

Backward-and-forward relay.

Hurdle relay.

North and south.
Leapfrog.
Volley ball.
Scrimmage ball.
Basket-ball relay.
Indian wrestling.
Hopping relay.
Straight-run relay.
Double relay.

Walk-and-run relay.
Pick-a-back relay.
Potato race.
Obstacle relay.
Rooster fight.
Square pull.
Dodge ball.
Football.
Newcomb.

Individual athletics for bar competition. (See p. 123.)

Apparatus for unsupervised and supervised play:

Running track.
Eight-pound shot.
Hurdles.
Volley-ball court.
Tennis court.
Indoor gymnasium.
La crosse course.

Jumping standards.
Apparatus for vaulting.
Baseball diamond.
Football field.
Basket-ball court.
Swimming pool.
Croquet set.

Suggestive schedule for group competitive games.

[illegible]

INDIVIDUAL ATHLETIC BAR COMPETITION.

Many boys fail to take part in special athletic contests because they are not able to compete with the best athlete in school in any one event. To overcome this obstacle and to encourage individual work in athletics the Indian Office will award athletic color bars to those pupils who are able to qualify in all the events of certain specified groups. The color of the bar awarded indicates the athletic attainments of the possessor.

A *Red Bar* will be awarded to each boy under 13 years of age who qualifies in all of the following events:

Pull up (chinning the bar), 5 times.

Standing broad jump, 5 feet 9 inches.

Fifty-yard dash in 7 seconds.

A *White Bar* will be awarded each boy under 18 years of age who accomplishes the following events:

Pull up, 10 times.

Standing broad jump, 7 feet.

One-hundred-yard dash, 12.6 seconds.

A *Blue Bar* will be given to any boy who accomplishes the following feats:

Pull up, 16 times.

Running broad jump, 18 feet.

Running high jump, 4 feet 8 inches.

Two-hundred-and-twenty-yard dash in 26 seconds.

In *pull up* (chinning the bar) the arms should be extended to full length each time and the body should be raised slowly, without kicking, jerking, or swinging, until the chin touches the bar.

In the other events Amateur Athletic Union rules shall govern.

Tests for bars should be given only twice a year.

A boy must accomplish all of each group of events at one meet.

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INDUSTRIAL WORK (DAY SCHOOLS).

FIRST, SECOND, AND THIRD GRADES.

Girls.

(Under the immediate direction of the housekeeper.)

FIRST AND SECOND GRADES.

I. Sewing:

- (a) Make handkerchiefs.
- (b) Hem hand towels.
- (c) Darning.
- (d) Mending.
- (e) Doll clothes may be made if there are dolls to be dressed.

II. Lace:

- (a) Crochet and bobbin for trimming of clothing.

III. Weaving from rags and fibers:

- (a) Mats.
- (b) Cushions.
- (c) Baskets.
- (d) Beadwork.

NOTE.—In fiber weaving, instruct pupils how to prepare their materials from the raw state—i. e., from reeds, willows, cacti, palm trees, roots, grasses, etc.

THIRD GRADE.

The following work is also for pupils in the first and second grades who are 10, or more than 10, years of age.

I. Sewing:

- (a) Make handkerchiefs.
- (b) Make towels, napkins, pillow cases, sheets.
- (c) Make a tub dress.
- (d) Make underclothing.
- (e) Make outfit for cooking—apron, sleeve protectors, cap, holder.
- (f) Simple embroidery for personal and household uses.
- (g) Older girls should be taught to make a layette, and clothing for children.

II. Housekeeping:

- (a) Sweeping, dusting, scrubbing, laundering, household sanitation, care of the kitchen, living room, bed rooms, sick room.

(b) Setting table, serving meals, clearing table, care of left-overs, washing dishes, and care of dish towels.

(c) Cooking of different kind of vegetables raised in the community.

(d) Making soups, cooking starchy foods, cereals, and meats.

(e) Making raised bread, cake, cookies, pies, etc.

(f) Making simple desserts and salads.

(g) Planning of meals, use of left overs, making menus, cooking and serving meals according to menus planned, estimating the cost per person.

(h) Preserving foods—canning, pickling, jellies, marmalades, etc.

(i) Furnishing a house of two rooms, three rooms, four rooms.

III. Care of a cow.

IV. Care of milk and how to make butter.

V. Kitchen gardening.

VI. Poultry raising.

VII. Weaving from rags and fibers.

(a) Rugs.

(b) Mats.

(c) Baskets.

(d) Cushions.

NOTE.—Pupils should be taught the economic value of the fibers in their community and how to prepare them for use in weaving.

VIII. Lace:

Irish crochet and bobbin for personal and household uses.

Boys.

(Under the immediate direction of the teacher.)

FIRST AND SECOND GRADES.

I. Gardening:

(See outline for school and home gardens for grade 3.)

II. Weaving:

(The same as for the girls.)

III. Cleaning detail:

(a) Keeping school grounds clean.

(b) Give work according to strength of pupils.

THIRD GRADE.

I. Study of plants:

(a) Seeds, grains, grasses.

(b) Buds, leaves, stems, etc.

(c) Legumes—variety and uses.

(d) Shrubs, trees, etc.

II. Study of soils, types, tillage, moisture, fertility.

III. Seeds:

(a) Selection.

(b) Testing.

IV. Cultivation of crops

(a) Potatoes.

(b) Corn.

(c) Wheat.

(d) Other crops grown locally.

V. Rotation of crops.

VI. Care of farm animals:

(a) Cows and milk.

(b) Poultry.

(c) Horses.

(d) Hogs.

(e) Sheep.

VII. Garden, school, and home:

(a) Locating, when, preferably in the fall—where; sunny slope, well drained, with, if possible, rich loam soil—size. Depends on age and physical strength of pupil.

(b) Clean up weeds, sticks, stones.

(c) Planning.

(d) Fertilizing.

(e) Seed-bed preparation.

(f) Planting, depth and distance apart.

(g) Tillage.

(h) Harvesting.

(i) Marketing.

(j) Friends of the garden—cultivate.

(k) Enemies of the garden—eradicate.

(l) Cultivation of fruits, berries, etc.

VIII. Articles which may be made:

(a) Bread board.

(b) Hen's nest.

(c) Hen's roost.

(d) Chicken coop.

(e) Milk stool.

(f) Feed trough.

(g) Wall shelf.

(h) Footstool.

(i) Bench.

(j) Table.

(k) Window screen.

(l) Door screen.

IX. Processes which may be learned:

- (a) Setting posts.
- (b) Building fence.
- (c) Repairing furniture.
- (d) Mending harness.
- (e) Oiling harness.
- (f) Care of farm and other tools.
- (g) Putting handles in tools.
- (h) Harnessing, hitching, and unhitching horses

X. List of tools:

Hammer.	Oil stone.
Hatchet.	Vise.
Axe.	Steel square.
Saw.	Spade.
Plane.	Hoe.
Brace and bits.	Fork.
Screw driver.	Scythe.
Chisel.	Rake.

INDUSTRIAL WORK—BOARDING SCHOOLS.

FIRST, SECOND, AND THIRD GRADES.

The industrial training of first, second, and third grade pupils attending boarding schools will be given in the regular industrial details by detailing them to work with pupils in the prevocational division.

In assigning pupils to the various industrial details due regard must be given to age, physical condition, kind of work, and hours of service.

FOURTH, FIFTH, AND SIXTH GRADES.

HOME TRAINING.

This course is to be given to all girls. At least 10 weeks' practice in housekeeping and 30 minutes' instruction daily should be given.

Special emphasis should be placed on the last topic in this outline—Motherhood and Child Welfare. This course aims to be a careful and intimate preparation for home making, marriage, and motherhood. Such instruction is of special importance to Indian girls, who will return to a life under more or less primitive conditions, and perhaps in communities in which there will be no one to whom they may go for advice. This is not a class-room course, but is to be given by the matron in her own room or in the girls' reading room or in some other room in the girls' quarters, where there may be much informality and discussion. The class hour should be fixed for the convenience of the matron. Some of the more scientific lectures may be given by the school physician and the school nurse, but the course is in charge of the matron. She should admit girls to this class in her discretion, considering not school attainment, but age, physical development, and the probability of the girl leaving school before completing the vocational course.

Before the end of the course each girl should be required to make a complete infant's layette.

I. The house:

(a) Its parts and uses.

(b) Evolution.

(e) Cleanliness—

1. Flies.
2. Mosquitoes.
3. Vermin.
4. Disease germs.
5. Sweeping and dusting.
6. Receipts for treating floors.

(d) Bedroom—

1. Bed making.
2. Ventilation.
3. General care.

(c) Living room—

1. Furnishings.
2. Care.

(f) Bathing facilities—

1. The bathroom.
2. Substitutes.

(g) Home decoration.

(h) Toilets—

1. Indoor.
2. Outdoor.

II. Water supply.

(a) Wells.

(b) Cisterns.

(c) Springs.

III. Personal hygiene.

(a) Bathing.

(b) Care of hair and nails.

(c) Care of teeth.

IV. Housekeeper's responsibilities:

(a) Care and training children.

(b) Economy in use of time, money, and supplies.

(c) Cultivation of judgment in selection of clothing, millinery, and house furnishing, books, papers, magazines, placing special emphasis on literature suitable for children.

(d) Social duties and obligations—

1. Duties of hostess.
2. Proper conduct in the home, on the street, in public, as a guest.

V. Motherhood and child welfare:

(a) Importance of proper parentage.

(b) Physiological changes during and after adolescence.

(c) Importance of clean sex life on the part of both parents.

(*d*) Special talks concerning woman's care of herself during pregnancy, proper preparation for the child, bathing and care of a new-born infant, the feeding and care of the child.

(*e*) Talks on marriage, conduct of girls during courtship, the beauties of home life, etc.

COOKING.

(Forty weeks: Instruction, 1½ hours per week; application, 22½ hours per week.)

I. The kitchen:

(*a*) Equipment—

1. Stove: Fire box, dampers, ash pan, oven, stovepipe.
2. Rules for building fire.
3. Table: Size, use, and care.
4. Utensils: Kinds and care.
5. Measurements.

(*b*) Personal habits as to—

1. Dress: Cotton, clean.
2. Hands: Nails clean.
3. Hair: Covered.
4. Towel and holder: Use and care.

(*c*) Dishwashing—

1. Requisites.
2. Preparation: Sorting and scraping.
3. Order of washing.
4. Care of dishcloth and towel.
5. Disposal of dishwater.
6. Separation and disposal of garbage.

(*d*) Lamps—Use and care.

(*e*) Cupboards and refrigerator—

1. Order of arrangement.
2. Sanitary care.

II. The dining room:

(*a*) Setting the table.

(*b*) Serving the meal.

(*c*) Table manners.

(*d*) Clearing table and care of left overs.

(*e*) Care of the room.

III. Food:

(*a*) Methods of cooking—

1. In hot water: Boiling, steaming, stewing.
2. In hot air: Broiling, roasting, baking.
3. In hot fat: Frying, sautéing.
4. Fireless cooker: Combination of methods.
5. Practice: Practical application of each method to common foods.

III. Food—Continued.

(b) Classes of foods—

1. Beverages—

Compare decoction and infusion.

Methods of preparation applied to beverages commonly used.

Practice: Coffee, tea, chocolate, cocoa, milk.

2. Cereals—

The principal nutriment to be considered in cooking cereals is starch. To gelatinize it and soften the cellulose of cereals requires thorough cooking.

Classes—Flaked and granular—More water absorbed by granular.

Preparation.

Ingredients—

One part by measure flaked cereal to 2 of water.

One part by measure granular cereal to 3 to 4 of water.

One part by measure cracked corn, wheat, or corn meal to 4 to 6 of water.

One cup dry cereal will serve 3 or 4 people.

One teaspoon of salt to 1 quart water.

Utensils: Measuring cup, fork, double boiler.

Method: Have water in lower part of double boiler; have required amount measured and salted in upper part directly over fire. Measure cereal and when water is boiling rapidly shake cereal in so slowly that water does not stop boiling. The first secret of well cooked cereal: Shake vessel to prevent grains settling. Cook for about five minutes. If necessary, lift with a fork to prevent sticking, but never stir flaked cereals. First cooking opens starch grains. Place in the outer boiler and cook at least 1 hour—2 or 3 is better for oat flakes. The fireless cooker is excellent to cook cereal overnight.

3. Meats—

Meat cookery depends on the proper application of fundamental principles.

Proteins are hardened by strong heat.

Fiber is softened by long, slow, moist cooking.

Juices are extracted by soaking in cold water and slow heating.

Practice: Apply principles in the cooking of tough and tender cuts of beef, mutton, pork, and poultry.

Meat stews, broths, and soups.

III. Food—Continued.

(b) Classes of food—Continued.

4. Fish—

Compare composition with meat.

Compare principles of cooking with meat.

Practice: Boil and bake fish.

5. Eggs—

Uses in cookery.

Soft cooked; hard cooked.

6. Milk—

Milking methods.

Care of milk.

Churning and care of butter.

Cottage cheese.

Use of condensed milk.

7. Vegetables—

Consider those common to community.

Cook strong-flavored vegetables in uncovered vessels.

Cook green vegetables covered to preserve color.

Vegetables are cooked to soften fiber and gelatinize starch.

Practice: Cook such vegetables as are obtainable. Encourage use of vegetables.

8. Bread—

Baking powder and sour-milk biscuits, corn bread.

Sweet and sour milk griddle cakes.

Yeast bread—

Proportion of liquid and flour.

Temperature of raising.

Temperature for oven.

Method of handling.

9. Salads—

Care in cleaning salad plants.

Use of dressings.

Practice: Prepare and encourage the use of simple green salads, lettuce, cabbage, celery, etc.

10. Desserts—

Plain puddings: Rice, cornstarch, and gelatin.

Custards, boiled and baked.

Junket.

Ginger cake and plain cake.

Frozen cream.

Pies.

III. Food—Continued.

(b) Classes of food—Continued.

11. Fruit—

Good fruit is wholesome and should be eaten freely, both fresh and cooked.

Unless perfectly fresh, fruit should be stewed. Add sugar after cooking.

Dried fruit must be soaked to replace moisture robbed in drying.

Cook slowly at low temperature.

Practice: Apple, cranberry, rhubarb, and berry sauce; baked apples, pears, bananas, dried apples, peaches, apricots, raisins, and currants.

IV. Kitchen economy:

(a) Cost of material.

(b) Methods of purchase.

(c) Care of supplies.

(d) Making menus—

1. Food combinations.

2. Individual amounts.

3. Use of left overs; soups, hashes, seasoning.

V. Preservation of foods:

(a) Canning of fruits and vegetables—

1. Demonstrate how to can the various kinds of fruits and vegetables by use of the cold-pack method. (See Farmers' Bulletins of the United States Agricultural Department.)

2. Demonstrate and explain the use of other methods of canning fruits.

3. The proper method of scalding, blanching, paring, coring, stemming, hulling, and seeding the various kinds of fruits.

4. The elimination of waste.

NOTE.—Probably one-half of all the fruit and vegetables raised are allowed to go to waste because they are not needed for immediate consumption. Home canning will save this waste.

(b) Storage. Importance of root cellars.

VI. Kitchen gardening:

POULTRY.

(Five weeks: Instructions, $1\frac{1}{2}$ hours per week; application $22\frac{1}{2}$ hours per week.)

I. Poultry: Chickens, ducks, geese, turkeys.

II. Breeds of chickens: Brahmas, Cochins, Leghorns, Langshans, Minorcas, Plymouth Rocks, Wyandottes, Rhode Island Reds, which are best for meat, best for eggs, best for dual purpose.

- III. Proper feed and care.
- IV. Construction of inexpensive house and care of same.
- V. Selection of eggs for hatching; loss of fertility in eggs.
- VI. Hatching with hens; hatching for early layers.
- VII. Feed and care of chicks.
- VIII. Diseases and treatment: Cholera, roup, gapes, pip.
- IX. Enemies: Lice, mice, etc.

SEWING.

(Thirty weeks: Instruction, $1\frac{1}{2}$ hours per week; application $22\frac{1}{2}$ hours per week.)

I. Before beginning garment-making certain terms should be learned, as: Draft, field, pattern, selvedge, right side, etc.

II. Talks on neatness, order, accuracy, economy of time, position for work, use and value of implements and material are given in connection with practical work.

III. Supply each pupil with tape measure and teach the yard and its divisions. Drill in accurate measurement of material.

IV. Study the standard makes of paper patterns. Compare as to fit, seam, allowance and construction guides. Consider methods of placing on the goods and marking construction lines.

V. Teach the construction of a sewing machine and develop the need of care in running, cleaning, and oiling. Speeding produces a jerky movement, bad for machine, work, and operator. No machine at any price will give the best service when not understood and well cared for. Work with regular, even movement of the feet.

A machine in constant use should be sparingly oiled each day and cleaned once a week. Learn to thread and needle the machine, to regulate the upper and under stitch, and use the common attachments.

VI. Talks on the origin, manufacture, use, and durability of cotton, wool, and linen fabrics.

VII. Take up the problem of cost in connection with each garment.

VIII. Shrink gingham or loose-weave material before cutting. Method: Put one cup of salt in a bucket of warm water. Allow the goods to soak in this several hours or overnight. Rinse in cold water and hang to drip dry. Press.

IX. To develop speed and responsibility, the construction of a second garment is recommended.

X. Art needlework and lace making should be taken up with special reference to the practical application of Indian design in home decoration.

XI. Constructive work:

Bag with pincushion: Measuring, basting, overhanding, back-stitching, hemming, running.

Napkin: French hem.

Belt: Mitering corners, turning points, machine stitching.

Kitchen apron with bib: Cutting straight lengths, overcasting, cutting, and applying bias facing; turning hem; tailored belt; buttonhole; blindstitching; sewing on two-holed buttons.

Petticoat: Flat fell, use of tucker, gathering ruffle, insert ruffle under tuck, finish placket, sewing on four-holed button, piecing bias bands, featherstitching.

Princess apron: Placing pattern and cutting, joining bias seams, turning circular hem.

Corset cover: Making peplum, sewing on lace.

Mending stockings and cutting down stockings, darning stitch, fell stitch.

Patch figured and woolen goods: Matching design, use of faded patch to match material, catstitching.

Drawers: New placket, use of gusset, use of insertion.

Nightgown: Shoulder facing; sleeves, collar; fly.

Child's rompers: Consider simplicity, durability, and appropriateness of material selected, such as linen, percale, poplin or piqué; welt seam; neck finish; leg finish.

Plain work dress: Amount of material, style, measurements, adapting pattern to measurements, placing pattern on goods, marking center lines, tracing stitching lines.

LAUNDERING.

(Fifteen weeks: Instruction, $1\frac{1}{2}$ hours per week; application, $22\frac{1}{2}$ hours per week.)

(a) Sorting clothes as to—

1. Color.
2. Material.
3. Use.

(b) Stains:

1. Remove before washing.
2. Consider origin, as meat, egg, milk, fruit, vegetable, medicine, mildew, ink, mineral, or acid.

(c) Washing white clothes:

1. Value of soaking.
2. Use of soap, water, washboard, and machine.
3. Boil to cleanse and sterilize.
4. Rinse to remove loosened dirt.
5. Blue to overcome yellow tinge.
6. Starch—

To improve appearance by stiffening.

To keep clean longer.

7. Drying—

Hang in open air and sunlight; clean pins and line.

(d) Washing colored clothes:

1. Set color with suitable mordant.
2. Wash quickly in warm rather than hot water.
3. Use mild soap free from alkali.
4. Rinse, starch, and dry quickly in the shade.
5. Colored hose washed by themselves.

(e) Washing woollens:

Wool fiber is sensitive to heat, friction, alkalis, and changes of temperature in water.

1. Wash without rubbing or twisting, in lukewarm water about 110°, containing a mild soap in solution.
2. Rinse twice in lukewarm, slightly soapy water.
3. Dry in moderate temperature, as hot sun burns and freezing shrinks.

(f) Importance of sterilization:

1. Time required, simplest method.
2. Disinfect or fumigate where sterilization is impracticable.
3. Methods.

(g) Bleaching; use:

1. Sunlight and moisture.
2. Ammonia.
3. Borax.
4. Chlorid of lime and soda.

(h) Ironing:

1. Methods of sprinkling.
2. Folding to hold and spread moisture.
3. Test temperature of iron to prevent scorching.
4. Necessity for good board, well padded and with clean cover.
5. Use of paper, holders, stand, wax, clean damp cloths, etc.
6. Methods of ironing flat pieces, starched and unstarched garments, hems, tucks, lace, embroideries, etc.

(i) Folding:

1. Importance of airing to prevent wrinkling when folded.
2. Methods of folding different garments to preserve appearance.

(j) Washing materials:

1. Water—
Hard or soft.
2. Soap—
Laundry; hard or soft.
Toilet; free from alkali.
Quality dependent on—
Cleanliness.
Proportion of ingredients.
Kind and proportion of foreign matter.

(i) Washing materials—Continued.

2. Soap—Continued.

Use. Cleanser and disinfectant.

In jelly form.

Recipes for making soap.

3. Soda; cleanse and bleach.

4. Borax; cleanse and bleach.

5. Starch—

Kinds; corn, wheat, potato, rice.

Relative value and cost.

Methods of making and use.

Starch substitutes.

6. Bluing: Kinds and use.

Effects on different material.

Preparation and use of bluing water.

Removal from garments.

(k) Washing utensils.

1. Tubs, wringer, and washboard, boiler, machine, clothes-line, pins, clothes rack, etc.

2. Use, care, and cost.

(l) General arrangement and management of home laundry.

Efficiency of processes.

(m) Value and cost of different kinds of work.

NURSING.

Nursing covers such a large amount of information that no text can be compiled to cover the entire field in detail. It is possible, however, to begin with simple nursing duties well within the comprehension of the pupil and by degrees, by teaching and by practice, add to this knowledge until the product is a capable, intelligent, trained, and experienced nurse.

It is necessary to give pupil nurses a certain amount of instruction in the technique of nursing before intrusting to them the actual care of patients. Most of the instruction given is best imparted by clinical demonstration.

It is especially desirable to be able to improvise in the home everything ordinarily needed in the care and nursing of the patient. It not infrequently happens that the nurse in the sick room is greatly embarrassed by lack of proper appliances. This may often be overcome if the nurse has been trained to apply her knowledge to such emergencies and possesses ordinary ingenuity.

There is a special place for nursing in all Indian schools and in all Indian communities. It is the beginning of sanitation, and therefore of the preservation and conservation of health. Usually those girls

having hospital experience are community centers of cleanliness. It is a course which, so far as possible, all Indian girls should take, especially for (1) personal hygiene, (2) domestic sanitation, (3) care of the newborn child and its mother, and (4) an essential knowledge of the facts of physical truth, honor, and purity.

In this connection, more particularly with regard to care of the unborn child, the newly born child and the expectant mother, the Child Welfare Bureau of the Government has issued some splendid bulletins which not only can be used for texts, but should be put into the hands of the more intelligent girls and mothers on the reservations. It is especially important that as many girls as possible have at least the prevocational course in nursing and some general experience and service in all departments of the school hospital, dispensary, drug room, ward, kitchen, etc.

I. The nurse:

- (a) Duties and responsibilities.
- (b) Dress and personal habits.
- (c) Keeping records.

II. The sick room:

- (a) Selection and preparation.
- (b) Care of the room and bed.
- (c) Hygiene of the sick room.
- (d) Use of simple domestic remedies.

III. The patient:

- (a) Pulse, temperature, and respiration; charting same.
- (b) Bodily care of the patient.
- (c) Relief of functional disturbances.
- (d) Administration of medicines.
- (e) External applications.

IV. Motherhood:

- (a) Pregnancy.
- (b) Preparation for labor.
- (c) Labor.
- (d) The lying-in period; management, dangers.
- (e) Management of cases of labor in isolated places.

V. Care of children:

- (a) Care of the newborn child.
- (b) Care of premature infants.
- (c) Common diseases of infancy.
- (d) Common diseases of childhood.
- (e) Surgical diseases of childhood.
- (f) Care and management of children.

VI. Infectious and contagious diseases:

- (a) Consider the general nature, symptoms, and care of the commoner diseases of this nature—especially tuberculosis and trachoma.
- (b) Fumigation after contagious disease.
- (c) Caring for the dead.

VII. Physiology and descriptive anatomy.

VIII. Feeding the sick:

- (a) Foods adapted for use with the sick.
- (b) Their preparation, serving, and use.
- (c) Recipes—
 - 1. Foods.
 - 2. Beverages.

IX. Accidents and emergencies:

(For first aid, see "Physiology and hygiene.")

X. Weights and measures; terms used in medicine and in nursing; dose lists.

AGRICULTURE.

In planning a prevocational course in agriculture it is deemed impracticable to give definitely what should be taught in each school on account of the great range in climatic conditions.

The following outline is intended to point out only essentials; it should be modified to meet local conditions.

GARDENING.

(Ten weeks: Instruction, 1½ hours per week; application, 22½ hours per week.)

All pupils in primary and prevocational grades in Indian schools must be given careful, systematic instruction in gardening and effective practice in doing actual garden work. If such instruction and training are given intelligently, it is believed that no other line of work can more reasonably be expected to be of permanent value.

In schools of all classes, and especially in those enrolling large numbers of pupils and giving many lines of industrial training, there is temptation to assign actual gardening to one or two employees and a small corps of boys, and to give the greater part of the student body little or no part in that work. This must not be done. Individual pupils' gardens of the type in which each child grows a large assortment of vegetables are neither forbidden nor required; but it is believed that in most schools it will not be expedient to have a majority of the pupils do the main part of their garden work in that way.

It is desired, however, that in each school some plan be adopted which, without eliminating well-organized cooperative effort toward

the matter of producing an abundant and properly varied supply of garden products for school use, will make each pupil responsible for some part of the crop and give him or her the stimulus and pleasure of watching the results of his or her own individual efforts.

As a suggestion, attention is called to the following diagram indicating how it is feasible to plant and cultivate different vegetables in long rows which together will constitute a large garden, at the same time assigning sections of these to the care of individual pupils.

	John.	James.	Charles.	Mary.	Emma.
Lettuce.....					
Radishes.....					
Carrots.....					
Onions.....					

NOTE.—The perpendicular lines in the diagram are intended to indicate stakes in the rows of vegetables, not paths or gaps.

It is specially mentioned that reservation schools, particularly the day schools, will be expected to extend their work in teaching proper methods of gardening and the care and utilization of garden products directly to the Indian homes around them. The pupils and their parents should be aided and encouraged in every feasible way to plant good gardens of adequate size at home, to cultivate them properly, and to make the best possible use of the products.

In this connection it will be feasible to encourage individual work on the best possible basis.

(a) Selection of site:

1. When—preferably in fall.

2. Where—

On sunny slope.

Rich friable loam.

Adjacent to house.

(b) Size:

1. For the family.

2. For the market.

(c) Fall preparation:

1. Cleaning.

2. Manuring.

3. Cover crops.

4. Plowing.

(d) Planning general map drawn to scale, showing:

1. What vegetables and bush fruits to grow.

2. How much space for each, and

3. To plan rotation.

(e) The hotbed :

1. Advantages.
2. Construction—
 - Depth.
 - Width.
 - Walls.
 - Cover.
 - Soil.
 - Drainage and water supply.
3. Planting—
 - What to plant.
 - How to plant each kind of seed.
 - Care.
 - When to transplant.

(f) Preparation of soil :

1. Fertilizing—
 - Barnyard manures.
 - Commercial fertilizers.
2. Plowing and pulverizing.

(g) Planting and transplanting :

1. Time—Proper soil temperature—
 - Early vegetables—onion sets, radishes, lettuce, some varieties of peas, spinach, early cabbage, early potatoes, etc.
 - Mid-season vegetables—beets, carrots, onion seed, late peas, early turnips, beans, etc.
 - Late vegetables—tomatoes, peppers, etc.
2. Depth, dependent upon—
 - Nature of soil.
 - Variety of seed and plants.
 - Season.
 - Moisture.
3. Arrangement—
 - Plant in rows.
 - Distance apart of seeds and plants.
 - Successive planting.
 - Crop rotation.

(h) Cultivation :

1. Object—
 - Conservation of moisture.
 - Aerating soil.
 - Keeping down weeds.

(h) Cultivation—Continued.

2. Implements—

Hand.

Horse.

3. Method in relation to sources of moisture—

Abundant rainfall.

Slight rainfall, conserve moisture.

Absence of rain, irrigation.

(i) Irrigation:

1. Methods—

Furrow.

Hose application.

Subirrigation.

Overhead irrigation.

2. Treatment between irrigations.

(j) Drainage:

1. For abundant rainfall.

2. For irrigation.

(k) Insect enemies:

1. Biting—

Kinds—caterpillars, beetles, weevils, cutworms.

Destruction—spraying with Paris green, Bordeaux mixture, arsenate of lead, hellebore, poisoned bait.

2. Sucking—

Kinds—lice, bugs, scale insects, root maggots.

Destruction—use of contact insecticides, as kerosene and carbolic acid emulsions, soap solution, lime, sulphur, tobacco dust, wood ashes.

(l) Diseases:

1. Common forms—

Mildew.

Blight.

Rust.

Black rot.

2. Destruction—

Bordeaux mixture.

Potassium sulphide.

Sulphur.

Formalin.

(m) Harvesting.

(n) Marketing.

(o) Storage and preservation :

1. Root cellars—

House.

Outside.

2. Burying.

3. Drying.

4. Canning.

5. Pickling.

6. Preserving.

(p) Cost and care of implements.

DAIRYING.

(Ten weeks : Instruction, $1\frac{1}{2}$ hours per week ; application, $22\frac{1}{2}$ hours per week.)

(a) Dairy cow :

1. Type, characteristics—

Temperament.

Milk organs.

Size.

Shape, triangular.

2. Breeds—

Holstein.

Jersey.

Guernsey.

Ayrshire.

(b) Barn :

1. Location—

Drainage with reference to dwelling.

Accessibility—to pasture, to other sources of feed, to other buildings than the dwelling.

2. Size and plan—

Depends on size of farm, of family, and relation of dairying to other farm operations.

Foundation, floor, light, ventilation, mangers, haymow, walls and ceiling, stalls and stanchion.

3. Care—

Ventilating.

Cleaning stalls, mangers, floors, etc., and removing of manure.

Disinfecting, whitewashing.

4. Barnyard—

Location.

Size.

Drainage.

Cleanliness.

Fencing.

(c) Silo:

1. Types—

Wood.
Steel.
Stone.
Brick.
Cement.
Tile.
Pit.

2. Size, depending on number of cows—

3. Ensilage—

Kinds of crops—corn, sorghum, alfalfa, cowpeas, soy beans.
Process of making.
Value as a winter food.

(d) Care of the cow:

1. Comfortable housing—

Clean stall.
Clean bedding.
Good ventilation; no drafts.

2. Feeding—

Classes of foods—water, minerals, milk producers, flesh formers.

How to feed—regularity, time, clean mangers, clean food.

Balanced rations—consider the proper proportions of milk-producing and fat-producing foods and roughage.

3. Milking—

Regularity, clean milking (stripping), changing milkers, time between milkings.

Preparation of cow—carding, washing udder.

Preparation of the milker—clean hands, clean clothing.

Treatment of the cow—be kind, avoid loud talking.

4. Care of milk—

Straining.

Separating.

Cooling, setting.

Care of cream—ripening, churning.

Butter making—working, washing, salting, making prints, rolls, packing.

Care of utensils to secure sanitary milk—washing, sterilizing.

(e) Testing the cow:

1. Keeping milk record—
Weighing each milking.
Daily record sheet.
2. Treating milk for butter fat—
Make tests with Babcock test.
3. Interpreting records—
Show by milk record and test the value of the cow as a dairy animal.

(f) Breeding:

1. When—
To supply milk when needed.
For convenience in caring for calves.
2. The bull—
His place in the herd.
Selection—choose a thoroughbred of good pedigree belonging to same breed as cows; avoid inbreeding.
Care.

(g) The increase:

1. General care of the calf—
Cleanliness.
Shelter.
2. Feeding the calf—
Whole milk.
Skim milk.
Substitutes for fats removed by skimming.
Changes of food during growth.
Frequency and ration.

(h) Marketing:

1. Butter.
2. Butter fats.
3. The increase.

(i) Diseases:

1. Tuberculosis.
2. Abortion—
Contagious.
Noncontagious.
3. Retention of after birth.
4. Garget.
5. Udder and teat trouble.
6. Scours.

FARMING.

I. STOCK RAISING.

(Ten weeks: Instruction, $1\frac{1}{2}$ hours per week; application, $22\frac{1}{2}$ hours per week.)

(a) The horse:

1. Brief historical sketch.
2. Breeds—
 - Clydesdale.
 - Percheron.
 - Coach.
 - Broncho.
 - Mustang.
 - Indian pony.
3. Feeding—
 - Concentrates—corn, oats, barley, bran, middlings, etc.
 - Roughage—hays, fodders, straw, forage.
 - Ensilage. (See Silo under Dairying.)
 - Rations.
4. Housing—
 - Plan of barn.
 - Barnyards.
 - Cleanliness.
5. Grooming—
 - Regular currying.
 - Washing.
 - Care of mane and tail.
6. Prevention of injuries.
7. Treatment of injuries—
 - Sore shoulders.
 - Cuts and bruises.
8. Care of feet and teeth.
9. Common diseases, prevention and treatment—colic, distemper, glanders, etc.
10. Breeding—
 - Advantages of pure-bred stock.
 - Bad effect of crossing.
 - Care of brood mare.

(b) The mule. (See outline on horse, topics 3 to 9.)

(c) Cattle:

1. Brief historical sketch.
2. Beef breeds, characteristics of—
 - Shorthorn.
 - Hereford.
 - Polled Durham.
 - Galloway.
 - Angus.

(c) Cattle—Continued.

3. Dairy breeds (considered in dairy course).
4. Feeding—
 - Importance of good pasture.
 - Feeds for winter—
 - Roughage—hay, fodder, straw.
 - Concentrates—corn, cotton seed, bran, middlings, etc.
 - Ensilage.
5. Shelter—
 - Barbarity of wintering on range.
 - Construction of inexpensive shelters.
 - Relation of shelter to food consumption.
6. Care of offspring.
7. Diseases, prevention and treatment.
8. Marketing.

(d) Hogs:

1. Brief history.
2. Breeds—
 - Duroc.
 - Berkshire.
 - Poland China.
 - Chester white.
 - Tamworth.
3. Care—
 - Shelter.
 - Feed—corn, swill, tankage, legumes, rape, etc.
 - Disease, cholera.
4. Breeding—importance of pure breeds; crossing.
5. Care of increase.
6. Slaughtering and caring for products.
7. Marketing.

(e) Sheep:

1. Breeds—
 - Cotswold.
 - Leicester.
 - Lincoln.
 - Shropshire.
 - Southdown.
 - Merino.
2. Care—
 - Housing.
 - Feeding—
 - Summer feed, pasture.
 - Winter feed, hay, fodder, beets, turnips, etc.

(e) Sheep—Continued.

3. Breeding.
4. Care of increase.
5. Diseases—scab, foot rot, fluke, prevention and treatment.
6. Products—
 - Mutton.
 - Wool.
 - Tallow.
 - Hides.
7. Marketing.

II. PLANT PRODUCTION.

(Thirty weeks: Instruction, $1\frac{1}{2}$ hours per week; application, $22\frac{1}{2}$ hours per week.)

(a) The soil:

1. What it is.
2. How formed—
 - From rock.
 - By action of air, water, temperature, plants, burrowing animals.
3. Kinds—
 - Sand.
 - Loam.
 - Clay.
 - Gumbo.
4. The best soil.
5. Uses—
 - To support the plant.
 - To furnish food.
6. Drainage—
 - Value—causes soil to crumble and become soft; roots go deeper; makes soil easier to warm; aids in sprouting seeds.
7. Irrigation—
 - The water supply—lakes, wells, streams.
 - Preparation of land, grading.
 - How water is carried—pipes, flumes, ditches.
 - Ways to irrigate—flooding, by furrows.
8. Soil improvement—
 - Tillage.
 - Manuring.
 - Raising cover crop.
 - Commercial fertilizers.
 - Rotation of crops.

(a) The soil—Continued.

9. Tillage—

Purposes—

- To loosen and pulverize soil.
- To bury manure and stubble.
- To expose soil to air and weather.
- To increase amount of plant food.
- To save moisture.
- To destroy weeds.
- To destroy insects.

Different ways of plowing—

- Shallow, for what crops.
- Deep, for what crops.

Kinds—

- Spring, object.
- Fall, object.
- Summer fallow, object.

10. Plant foods—

- Supplied by air.
- Supplied by soil.
- Taken in by leaves and roots.

11. Rotation of crops—

- What is rotation.
- Why rotate—
 - To preserve fertility.
 - To increase the yield.
- Order and kinds, depending upon locality.

(b) Seed:

1. Parts—

- Germ.
- Food.
- Case.

2. Selection—relation to yield.

3. Testing—

- Why.
- How.

4. Germination—

- Moisture required.
- Heat required.
- Air required.

(c) Farm crops:

1. Corn—

- Identification.
- Seed bed.
- Seed selection and testing.

(c) Farm crops—Continueud.

1. Corn—Continued.

Planting and cultivation.

Harvesting.

Storing.

Marketing.

(Use above outline in study of all crops considered.)

2. Wheat.

3. Oats.

4. Sorghums.

5. Legumes—

Clover.

Alfalfa.

Cowpeas.

Soy beans.

6. Grasses.

7. Potatoes.

8. Other crops of the locality.

(d) The orchard:

1. The apple—

Selection of location and soil

Selection of varieties.

Planting.

Cultivating.

Pruning.

Insect enemies and diseases and how to prevent and destroy them.

Harvesting.

Caring for product.

Marketing surplus.

(Use above outline in study of all fruits considered.)

2. The peach.

3. Cherry.

4. Plum.

5. Other common fruits of the locality.

(e) Small fruits of the locality:

1. Grapes—

Selection of location and soil.

Selection of varieties.

Planting.

Cultivating.

Pruning.

Insect enemies and diseases and how to prevent and to destroy them.

(e) Small fruits of the locality—Continued.

1. Grapes—Continued.

Harvesting.

Caring for product.

Marketing surplus.

(Use above outline for study of berries.)

2. Berries.

III. ROADS.

(a) Importance of good roads.

(b) How to make earth roads.

IV. CARE OF IMPLEMENTS.

(a) Sheltering.

(b) Cleaning.

(c) Painting.

(d) Economy in purchase.

V. BEAUTIFYING HOME GROUNDS.

(a) Location of buildings.

(b) Walks and drives.

(c) Lawn.

(d) Trees, shrubs, vines, and flowers.

FARM CARPENTRY.

(Fifteen weeks: Instruction, $1\frac{1}{2}$ hours per week; application, $22\frac{1}{2}$ hours per week.)

I. Names, uses, care, and cost of tools necessary to ordinary carpenter work on the farm.

II. Exercises in the use of the saw, plane, chisel, brace and bit, hatchet, hammer, screw driver, hand vise, level, straightedge, steel square, miter box.

III. Material: (a) Lumber; different kinds, grades, sizes; methods of measuring; cost. (b) Building hardware and cost; nails, door locks, latches, hinges, butts, cupboard catches, drawer pulls, wardrobe hooks, screws, hinges, staples, hooks, hasps.

IV. Making repairs; fences, gates, floors, steps, doors, windows, screens, tables, chairs.

V. Practice in making useful articles for farm and home, such as sawbuck, wagon jack, hammer handle, plank drag for roads, step-ladder, window and door screens, farm gate, stanchion, hayrack, wagon box, hog and chicken troughs, clothes rack, kitchen table, ironing board, rustic chair, singletree, evener.

VI. Farm buildings: (a) Making plans for house, barn, hogpen, chicken coop, root house, privy, and estimating quantity and cost of material. (b) Framing simple buildings, making door and window frames, hanging doors, simple interior finishing.

FARM BLACKSMITHING.

(Ten weeks: Instruction, $1\frac{1}{2}$ hours per week; application, $22\frac{1}{2}$ hours per week.)

It is intended that all boys in the fourth, fifth, and sixth grades, or prevocational period, shall receive sufficient instruction in blacksmithing to enable them to do simple repair work on farm tools and implements.

Those who demonstrate capacity for this line of work and select blacksmithing as a vocation will be given an opportunity to continue the course during the vocational period.

I. The shop equipment and cost:

(a) The forge.

(b) Blast—

1. Coal.

2. Coking.

(c) The anvil.

II. Names, uses, and cost of tools:

Hammers.

Tongs.

Chisels.

Punches.

Drills.

Sledges.

Files.

Rasps.

Hack saw.

III. First steps in blacksmithing:

(a) Making fires.

(b) Drawing out and bending as in staple making.

(c) Shoulder forming and twisting as in gate hooks.

(d) Upsetting, heading, squaring, and chamfering as in the bolt.

IV. Welding:

(a) Lap.

(b) Split.

(c) Cleft.

V. Soldering.

VI. Hardening and tempering.

VII. Sharpening plowshares, cultivator shovels, etc.

VIII. Repairing farm tools and implements:

Fork handles.

Hoe handles.

Shovel handles.

Singletrees.

Doubletrees.

IX. Nailing on horseshoes.

FARM ENGINEERING.

(Ten weeks: Instruction, 1½ hours per week; application, 22½ hours per week.)

This course provides for valuable training of an elementary character along varied lines for one who has the care of the property about the modern homestead.

I. Essential parts of boiler.

II. Boiler fittings.

III. Furnace fittings.

IV. Boiler management:

(a) Filling.

(b) Building fires.

(c) Management of fires—

1. Banking.

2. Cleaning.

3. Hauling.

(d) Regulating dampers.

V. Steam engine (stationary):

Essential parts.

VI. Gas engine:

(a) Stationary.

(b) Traction.

VII. Operation and care of engines.

VIII. Pipe repairing and fitting:

(a) Tools; pipe tongs, vises, wrenches, dies.

(b) Cutting pipe.

(c) Cutting threads.

IX. Pump repairing:

(a) Packing cylinder.

(b) Draining.

X. Soldering.

XI. Laying sewer pipe:

(a) Cementing connections.

(b) Pitch or fall.

(c) Size.

(d) Calking soil pipe.

XII. Repair work:

(a) Tanks.

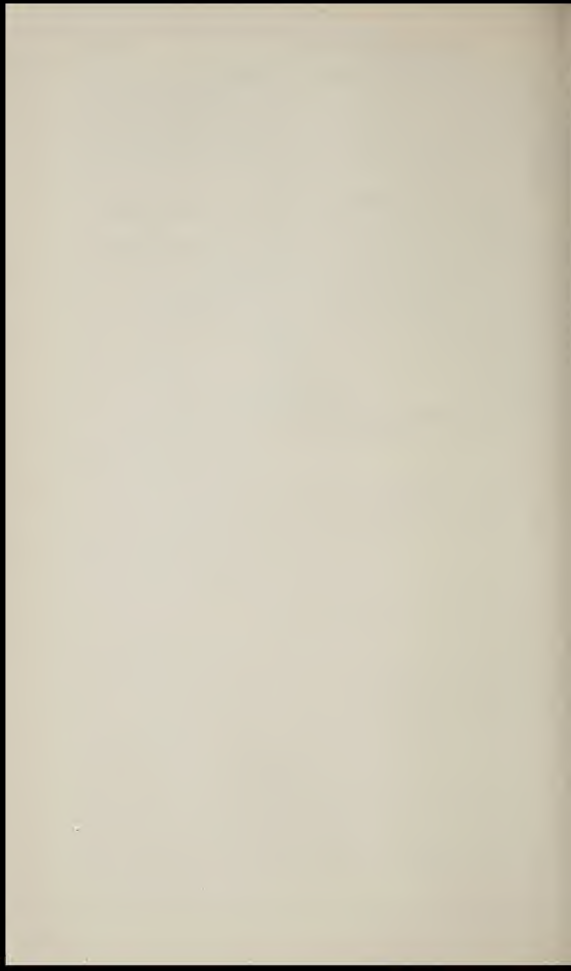
(b) Faucets.

(c) Valves.

(d) Cocks.

(e) Sinks.

(f) Toilet plumbing.



VOCATIONAL DIVISION.

"I know of no pursuit in which more real and important service can be rendered to any country than improving its agriculture."—George Washington.

SYNOPSIS OF COURSE IN AGRICULTURE.

First year:

English, 40 weeks, 60 minutes daily.

Arithmetic, 40 weeks, 40 minutes daily.

Industrial geography, 20 weeks, 30 minutes daily.

Agricultural botany, 20 weeks, 30 minutes daily.

General exercises (assembly, music, current events, civics, penmanship), 40 weeks, 25 minutes daily.

Physical training, 40 weeks, 60 minutes daily.

Farm practice—

Instruction (farm implements), 40 weeks, $1\frac{1}{2}$ hours per week.

Application, 40 weeks, $22\frac{1}{2}$ hours per week.

Second year:

English, 40 weeks, 60 minutes daily.

Arithmetic and accounts, 40 weeks, 40 minutes daily.

United States history, 20 weeks, 30 minutes daily.

Soils and soil fertility, 20 weeks, 30 minutes daily.

General exercises (assembly, music, current events, civics, penmanship), 40 weeks, 25 minutes daily.

Physical training, 40 weeks, 60 minutes daily.

Farm practice—

Instruction (horticulture), 40 weeks, $1\frac{1}{2}$ hours per week.

Application, 40 weeks, $22\frac{1}{2}$ hours per week.

Third year:

English, 40 weeks, 60 minutes daily.

Farm and household physics, 20 weeks, 70 minutes daily.

Agricultural chemistry, 20 weeks, 70 minutes daily.

General exercises (assembly, music, current events, civics, miscellaneous), 40 weeks, 25 minutes daily.

Physical training, 40 weeks, 60 minutes daily.

Farm practice—

Instruction (types and breeds of farm animals), 40 weeks, $1\frac{1}{2}$ hours per week.

Application, 40 weeks, $22\frac{1}{2}$ hours per week.

Fourth year:

English, 40 weeks, 45 minutes daily.

Field crops, 20 weeks, 45 minutes daily.

Plant diseases, 20 weeks, 45 minutes daily.

Insects and insecticides, 20 weeks, 40 minutes daily.

Rural economics, 20 weeks, 40 minutes daily.

General exercises (assembly, music, current events, civics, miscellaneous), 40 weeks, 25 minutes daily.

Physical training, 40 weeks, 60 minutes daily.

Farm practice—

Instruction (feeds and feeding), 40 weeks, $1\frac{1}{2}$ hours per week.

Application, 40 weeks, $22\frac{1}{2}$ hours per week.

SYNOPSIS OF COURSE IN HOME ECONOMICS.

First year:

- English, 40 weeks, 60 minutes daily.
- Vocational arithmetic, 40 weeks, 40 minutes daily.
- Industrial geography, 20 weeks, 30 minutes daily.
- Agricultural botany, 20 weeks, 30 minutes daily.
- General exercises (assembly, music, current events, civics, penmanship), 40 weeks, 25 minutes daily.
- Physical training, 40 weeks, 60 minutes daily.
- Cooking—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Sewing—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Production, 40 weeks, 16 hours per week.

Second year:

- English, 40 weeks, 60 minutes daily.
- Vocational arithmetic, 40 weeks, 40 minutes daily.
- United States history, 20 weeks, 30 minutes daily.
- Soils and soil fertility, 20 weeks, 30 minutes daily.
- General exercises (assembly, music, current events, civics, penmanship), 40 weeks, 25 minutes daily.
- Physical training, 40 weeks, 60 minutes daily.
- Cooking—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Sewing—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Production, 40 weeks, 16 hours per week.

Third year:

- English, 40 weeks, 60 minutes daily.
- Farm and household physics, 20 weeks, 70 minutes daily.
- Agricultural chemistry, 20 weeks, 70 minutes daily.
- General exercises (assembly, music, current events, civics, miscellaneous), 40 weeks, 25 minutes daily.
- Physical training, 40 weeks, 60 minutes daily.
- Cooking—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Sewing—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Production, 40 weeks, 16 hours per week.

Fourth year:

- English, 40 weeks, 45 minutes daily.
- Child study, 20 weeks, 45 minutes daily.
- Insects and insecticides, 20 weeks, 40 minutes daily.
- Rural economics, 20 weeks, 40 minutes daily.
- General exercises (assembly, music, current events, civics, miscellaneous), 40 weeks, 25 minutes daily.
- Physical training, 40 weeks, 60 minutes daily.
- Cooking—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Sewing—
 - Instruction, 40 weeks, 1 hour per week.
 - Application, 40 weeks, 3 hours per week.
- Production, 40 weeks, 16 hours per week.

SYNOPSIS OF TRADE COURSES.

CARPENTRY.¹

First year :

- English, 40 weeks, 60 minutes daily.
- Vocational arithmetic, 40 weeks, 40 minutes daily.
- Industrial geography, 20 weeks, 30 minutes daily.
- Agricultural botany, 20 weeks, 30 minutes daily.
- General exercises (assembly, music, current events, civics, penmanship), 40 weeks, 25 minutes daily.
- Physical training, 40 weeks, 60 minutes daily.
- Drafting, 40 weeks, 2 hours per week.
- Carpenters' tools, equipment, lumber, joinery—
 - Instruction, 40 weeks, 1½ hours per week.
 - Application, 40 weeks, 20½ hours per week.

Second year :

- English, 40 weeks, 60 minutes daily.
- Vocational arithmetic, 40 weeks, 40 minutes daily.
- United States history, 20 weeks, 30 minutes daily.
- Soils and soil fertility, 20 weeks, 30 minutes daily.
- General exercises (assembly, music, current events, civics, penmanship), 40 weeks, 25 minutes daily.
- Physical training, 40 weeks, 60 minutes daily.
- Drafting, 40 weeks, 2 hours per week.
- Builders' hardware, woodworking machinery, joinery as applied to cabinet work, window and door frames, etc.—
 - Instruction, 40 weeks, 1½ hours per week.
 - Application, 40 weeks, 20½ hours per week.

Third year :

- English, 40 weeks, 60 minutes daily.
- Farm and household physics, 20 weeks, 70 minutes daily.
- Agricultural chemistry, 20 weeks, 70 minutes daily.
- General exercises (assembly, music, current events, civics, miscellaneous), 20 weeks, 25 minutes daily.
- Physical training, 20 weeks, 60 minutes daily.
- Drafting, 40 weeks, 2 hours per week.
- Construction of cottage—
 - Instruction, 40 weeks, 1½ hours per week.
 - Application, 40 weeks, 20½ hours per week.

Fourth year :

- English, 40 weeks, 45 minutes daily.
- Field crops, 20 weeks, 45 minutes daily.
- Plant diseases, 20 weeks, 45 minutes daily.
- Insects and insecticides, 20 weeks, 40 minutes daily.
- Rural economics, 20 weeks, 40 minutes daily.
- General exercises (assembly, music, current events, civics, miscellaneous), 40 weeks, 25 minutes daily.
- Physical training, 40 weeks, 60 minutes daily.
- Preparing plans, estimates, building construction—
 - Instruction, 40 weeks, 1½ hours per week.
 - Application, 40 weeks, 22½ hours per week.

¹ A trade may be selected from any one of the following: Blacksmithing, engineering, painting, printing, and masonry, including concrete, stone, bricklaying, and plastering. The academic work for these trades is the same as for carpentry.

ENGLISH.

GRAMMAR AND COMPOSITION.

Where the time is limited the study of technical grammar should be made secondary to training in the use of language itself for expression (both written and oral). The training in the practical aspect of language should be very thorough in any course so constituted. While formal grammar should not be taken up too early, yet such words as "noun," "verb," "adjective," "phrase," etc., may be used and explained early, even in the lower grades. The use of such words is always legitimate whenever the idea is back of the word itself. Language is essentially a habit rather than a matter of technical rules and definitions. Like other habits, it is formed from more or less exercise and repetition. As a means of expression the work should be based upon an actual desire for expression, either as the fruit of the natural desire or the desire stimulated in the child by the teacher; without such desire and interest the work is likely to prove fruitless. Accuracy of expression depends upon clearness of thought, fullness of thought. As the teacher must guide thought and expression, it can be seen that the teacher's own habits in these respects will greatly influence those of the child. Constant association with correct usage is the best teacher that any individual can have. All these things indicate the necessity for a definite and particular aim in each lesson by the teacher.

FIRST YEAR.

Encourage the use of the larger dictionaries, encyclopedias, and other available works of reference.

Watch for incorrect forms used by pupils and give much drill upon the correct forms.

Call attention incidentally to rhetorical terms and figures of speech as found in studies (such as simile, metaphor, etc.).

Oral exercises:

Talks on observations and experiences of pupils.

Oral reproductions of stories read by the pupils themselves or by the teacher to the pupils. Current events.

Oral reports on books that have been read.

Recitation of poems and prose selections, memory gems, etc.

Topical recitations based on classroom work or industrial activities; agriculture, shops, home life, reading, history, geography, civics, etc.

Have pupils make outlines from which to talk. Have pupils talk freely from such outlines; also from outlines made by the teacher.

Written exercises:

Emphasize spelling, punctuation, proper use of capitals, correct use of words, correct forms of sentence, logical arrangement of material, paragraphing, syllabication as exemplified by the division of words at the end of a line.

Much of the written work may parallel that already outlined above for oral work. The outlines referred to above become a portion of the written work hereunder. In so doing the teacher should develop the idea of the sentence and the paragraph. Each topic requires a separate paragraph. Each paragraph should be arranged logically. What constitutes a paragraph? Teach the subject of the paragraph, the topic sentence of the paragraph, and the manner of arrangement of the subject matter of the paragraph. Make use of illustrative selections from the readers or from the books read.

Continue the work of letter writing. This is a valuable form of expression and a practical one, covering so many of the basic principles. Write formal, informal, friendly, and business forms of letters; also forms involving the following: Letters of friendship, business, introduction, application, recommendation, invitation, acceptance, regret, answering advertisements, writing advertisements, etc.

Mechanics of language:

The sentence as a group of words expressing a complete thought. It is the unit form in which thought is expressed. Combine simple sentences into compound sentences and complex sentences. Reconstruct complex sentences and compound sentences into forms of simple sentences expressing the same thought. Have the pupils give copious examples of their own or from their reading. Examine sentences in the readers and other texts and give them the same treatment herein indicated.

Subject and predicate. Teach these terms and locate them in the actual written work of the pupils; have the pupils also find subjects and predicates in their texts and in books read.

Develop practically the definitions of noun, pronoun, adjective (including the articles "a" or "an" and "the"), verb, and adverb in sentences of the pupil's own composition or selection. Make this work practical and not technical. Do not closely follow the technicalities of any text on these points. Teach how the above terms (noun, pronoun, verb, adjective, and adverb) group themselves naturally into the two essential groups of subject and predicate. Have frequent drills to fix correct forms and uses of words.

SECOND YEAR.

The work of this year should be a consistent continuation of the work of the prior grades. The pupils should now be able to give their own work considerable critical attention and careful correction before handing it in, and they should be encouraged to do so. More freedom may now be granted in the choice of subjects. It is desirable at this stage to work for both speed and accuracy in all expression work, whether written or oral. The following are suggested as some means to these ends:

Original work:

Encourage the children to converse and write about the familiar things of their respective environments, both at school and at home—especially topics having to do with agricultural, industrial, and domestic activities. The mythology of the Indian and his fund of imagination afford a rich variety of topics for the basis of this work. The children may write short accounts or give short accounts of these things, using outlines which they have framed for the purpose. Do not require long talks or lengthy compositions. Aim for quality rather than quantity, for 2 well-written paragraphs rather than 10 faulty ones.

Letter writing:

Continue this valuable form of exercise. Study the paragraph. Drill on the grouping of sentences into paragraphs. The preparation of advance outlines will greatly help in so doing. Note the arrangement, margin, indentation, and general arrangement and appearance of paragraphs in various books at hand. Indicate the topics in an outlined paragraph or collection of paragraphs. Review the parts of a letter—heading, address, salutation, body, complimentary close, and signature. Review the purposes of letters. Review the materials for letter writing, including the paper, its folding, and its envelope. Proper paragraphing; a separate paragraph for each topic. Business letters should be (1) clear and (2) direct. Business letters should not be discursive.

News items:

If the school possesses a printing plant (and such a plant is an excellent adjunct to a course in English), news items may be prepared by the pupils as a portion of their English work and used by the school periodical as subject matter (where worthy) for publication.

Book reviews:

Pupils should be encouraged to outline books which they read. They should also be encouraged to write reviews of such books, using the outlines as an aid to such work. These reviews may be read before the class or the entire school. The teacher should give instructions as to the shaping and grouping of material for this work. If the review is a long one, the teacher should encourage the pupil to place a written outline upon the blackboard and develop the review (either written or oral) from such outline where it is visible to the entire class.

Mechanics of language:

Do not attempt to cover all the technical details of language. The amount of work to be covered along these lines is indicated in a report of the Committee on Elementary Course of Study of the Minnesota Educational Association. This report suggests that the amount of grammar studies should be limited to the following:

1. The eight parts of speech.

2. Nouns—

- (a) In general, no distinctions as to kinds, except common and proper.

- (b) Two case forms: Common and genitive (according to terminology adopted by the N. E. A. at its Salt Lake meeting).

3. Pronouns—

- (a) Personal, relative.

- (b) Person, gender, number, and case.

NOTE.—Case not always distinguished by form.

4. Adjective—Degree.

5. Verbs—

- (a) Kinds: Transitive, intransitive.

- (b) Conjugation: Regular, irregular, but not to be learned apart from the study of sentences and selections.

- (c) Person: First, second, third with personal subjects, impersonal.

- (d) Number: Singular, plural.

- (e) Voice: Active, passive.

- (f) Mood: Indicative and imperative only.

- (g) Nonmodel forms: Simple infinitives and participles.

- (h) Tense: All.

6. Preposition.

7. Conjunction.

Mechanics of language—Continued.

8. Adverbs.

9. Interjections.

10. The sentence—

Kind—

Simple, complex, compound.

Declarative, interrogative.

Subject—

Simple, compound.

Complete subject, subject substantive.

Predicate—

Simple, compound.

Complete predicate, predicate verb.

Clauses—Principal, subordinate.

Use of clauses—Substantive, adjective, adverbial.

Phrases—Substantive, adjective, adverbial.

Teach the principal rules of syntax, illustrating them by an abundance of material. Encourage pupils to correct their own errors. Encourage and develop a personal pride of language and expression. Give frequent drills and reviews on troublesome forms of verbs and pronouns.

Teach the analysis of sentences in some such forms as the following:

Analysis of simple sentences—

Subject and predicate; complete subject; complete predicate.

Simple subjects with modifiers.

Nouns—Common, proper; singular, plural; use in sentences.

Pronouns—Kinds; singular and plural; use in sentences.

Adjectives.

Phrases.

Adjective phrases.

Prepositions—Simple predicate with modifiers.

Verbs—

Transitive; intransitive.

Direct object; indirect object.

Adverbs—Modifying (1) verbs, (2) adjectives, (3) adverbs.

Adverbial phrases.

Analysis of compound sentence—

Separation into component simple sentences.

Analysis of simple sentences according to form for simple sentences.

Coordinating conjunctions.

Analysis of complex sentences—

Independent element.

Dependent element—Clause—

Noun clause.

Adjective clause.

Adverbial clause.

Subordinating connectives—

Subordinating conjunctions.

Relative pronouns.

Conjunctive adverbs.

Assist the pupil in discovering for himself (so far as possible) the following facts and give much drill upon them until the power is acquired to recognize instantly the forms and constructions with which they are concerned:

1. A noun or pronoun which denotes but one object or person must have a singular form.

2. A noun or pronoun used as the subject of a verb must have the nominative form.

3. A noun or pronoun used as the object of a verb, a participle, an infinitive, or a preposition must have the objective form.

4. A relative pronoun should come immediately after its antecedent.

5. A subject that denotes one person or thing spoken of, and only such subject, should have a verb that ends in "s."

6. The perfect participle should always be used with some form of the auxiliaries "be" and "have" and only with such auxiliaries.

7. A participle that begins a statement should modify the meaning of the principal word in the subject of that statement.

8. Only one comparative or superlative form of an adjective or adverb should be used in expressing a comparison.

9. Only one negative adverb should be used in expressing a negation.

It is well worth while to give frequent and intensive drill on the above nine basic principles. An observance of those principles goes far to give correct expression. To ignore them will go far toward destroying any possibility of correct expression.

THIRD YEAR.

I. The value of composition:

- | | |
|--|--------------------|
| (a) Oral composition | } Practical value. |
| (b) Written composition | |
| (c) Learning to talk and to write. | |
| (d) Reading and help to writers. | |
| (e) The importance of reading aloud. | |
| (f) The importance of good recitation. | |
| (g) Exercises. | |

II. The choice of a subject :

- (a) Subjects based on industrial experience.
- (b) Subjects based on general experience.
- (c) Books and other material suggesting good subjects.
- (d) Subjects based on imagination.
- (e) Limited subjects.
- (f) Exercises.

III. The manuscript :

- (a) General neatness.
- (b) Arrangement—
 - 1. The heading.
 - 2. The sentence and its punctuation.
 - 3. Spelling.
 - 4. The paragraph.
- (c) The two copies of a manuscript—
 - 1. First draft or rough copy.
 - Write rapidly, after blocking outline.
 - Revise slowly and see that—
 - Every word is correctly spelled.
 - Every sentence is properly punctuated.
 - Every sentence has a subject and a predicate.
 - Every paragraph is indented.
 - 2. Second copy.
 - Headings.
 - Margins.
 - General neatness.
 - Revising and rewriting.
- (d) Exercises.

IV. The composition as a whole :

- (a) The composition as a unit.
- (b) Making the outline.
- (c) Filling in the outline.
- (d) Exercises.

V. The paragraph as a unit :

- (a) Independent paragraph.
- (b) Length of the paragraph.
- (c) Unity.
- (d) The plan of the paragraph.
- (e) Connected paragraphs.
- (f) Paragraph topics.
- (g) The topic sentence.
- (h) Exercises.

VI. The sentence as a unit:

- (a) The sentence—
 - 1. Simple.
 - 2. Compound.
 - 3. Complex.
- (b) Punctuation—
 - 1. The period.
 - 2. The interrogation point.
 - 3. The exclamation point.
 - 4. The comma.
 - 5. The semicolon.
 - 6. The colon.
 - 7. The dash.
 - 8. The parenthesis.
 - 9. Brackets.
 - 10. The apostrophe.
 - 11. Quotation marks.
 - 12. The hyphen.
 - 13. Asterisks and leaders.

VII. The paragraph and its development:

- (a) Aids in securing unity—
 - 1. A topic sentence.
 - 2. A definite plan.
 - 3. A fixed point of view.
- (b) The coherent paragraph.
- (c) Aids in securing coherence—
 - 1. Logical order of details.
 - 2. Connectives.
- (d) The emphatic paragraph.
- (e) Aids in securing emphasis—
 - 1. Important words and sentences in conspicuous positions.
 - 2. Sufficient space for important details.
- (f) Emphasis through position.
- (g) Emphasis through proportion.
- (h) Development of the paragraph.
- (i) Subjects for composition.
- (j) Exercises.

VIII. The effective sentence:

- (a) Unity in the sentence; how secured.
- (b) Simple and complex sentences as units.
- (c) Uniform construction.
- (d) Long or short sentences.
- (e) Coherence in the sentence; how secured.
- (f) Emphasis in the sentence; how secured.
- (g) Superfluous words.

VIII. The effective sentence—Continued.

(h) Life in the sentence.

(i) Exercises.

IX. The exact word:

(a) A ready vocabulary.

(b) The exact meaning of words.

(c) Words worth studying.

(d) Words in good and general use.

(e) Helps in choosing words.

X. The forcible word:

(a) The choice of forcible words.

(b) Simple words.

(c) Specific words.

(d) Figurative words.

(e) Similes and metaphors.

(f) Mixed metaphors.

(g) Metonymy.

(h) Personification.

(i) Apostrophe.

(j) The transferred epithet.

(k) Exercises.

FOURTH YEAR.

XV. Narration:

(a) The study of common forms of prose.

(b) The incident.

(c) The news item.

(d) Longer narratives.

(e) Directions for telling a story. Secure—

Unity of effect.

Coherence.

Emphasis and force.

Begin by arousing intelligent interest.

By preparatory explanation.

By fixing attention on suggestion.

Maintain proper proportion in relation.

Maintain suspense in interest.

Introduce conversation skillfully.

Develop a fitting consistent climax.

(f) Exercises.

XII. Description:

(a) Material for pictures.

(b) A limited subject.

(c) The point of view.

(d) Choice of details and plan.

XII. Description—Continued.

- (e) Description by suggestion.
- (f) Description by effect.
- (g) Reproduction of sensations.
- (h) Directions for writing descriptions.
- (i) Exercises.

XIII. Exposition:

- (a) The meaning of exposition.
- (b) Definition and its phrasing.
- (c) Unity.
- (d) Arrangement of material.
- (e) Exposition by—
 - 1. Details.
 - 2. Examples.
 - 3. Repetition.
 - 4. Comparison and contrast.
 - 5. Cause and effect.
- (f) Directions for writing exposition.
- (g) Special forms of exposition:
 - 1. The abstract.
 - 2. Book reviews.
 - 3. Notes and note taking.
 - 4. Newspaper editorials.
 - 5. Character sketches.
 - 6. Letters.
- (h) Exercises.

XIV. Argument:

- (a) Exposition and argument.
- (b) Developing the argument.
- (c) The argumentative letter.
- (d) Debates.
- (e) Terms used in debate—
 - 1. Proposition.
 - 2. Affirmative.
 - 3. Negative.
 - 4. Colleagues.
 - 5. Opponents.
 - 6. Evidence.
 - 7. Burden of proof.
 - 8. Refutation.
 - 9. Rebuttal.
- (f) Framing the proposition.
- (g) The finding of material.

XIV. Argument—Continued.

(h) The brief—

1. Introduction—

How the question arose.

What facts are admitted by both sides.

What is the exact point at issue.

2. Brief, proper—

Separation of main arguments from the subordinate.

Arrange main arguments in logical order.

Group under them the subordinate arguments and see that each subdivision is a reason for the truth of the division under which it comes.

3. Conclusion—

Sum up argument concisely.

4. Assertion and proof—differentiate.

(i) The speaking.

(j) Subjects for debates.

(k) Management of a debate—

1. Preparation.

2. Principal speakers and substitutes.

3. Division of work among the speakers.

4. General outline of a debate—

The first affirmative speaker outlines his entire case, showing what he and his colleague are to prove, and he presents his portion of the proof.

The first negative speaker shows what he and his colleague are to prove, and he presents his portion of the proof. He may, if he wishes, anticipate points likely to be made by the second speaker on the affirmative side. He has the advantage of knowing what the opening speaker has said and does what he can to weaken those arguments.

The second affirmative speaker develops the work outlined by his colleague and answers the first negative speaker. He also sums up the affirmative case.

The second negative speaker finishes the defensive work instituted by his colleague and does his best to refute the arguments of the affirmative. He sums up the case for the negative.

General debate from the floor, if desired. This affords an opportunity for everyone to say something, though these arguments must of necessity be brief. If volunteers do not use the time, the leaders may be allowed to speak again, though this is not commonly done. The speakers on both sides should make skillful use of repetition in presenting the main points.

After the close of the general debate, one representative from each side is entitled to make a final speech in rebuttal, introducing no new evidence or argument except for the

XIV. Argument—Continued.

(k) Management of a debate—Continued.

purpose of answering an opponent or for clarifying or emphasizing prior argument by the speaker's own side. The representative of the affirmative closes the debate. The burden of proof rests on his side and therefore he has the last word. The closing speakers need to be especially clever in singling out the main points proved and in carrying them home to the audience in a clear, concise, forceful summary.

5. Judges—

Three judges may be appointed to determine which side has been the more successful in convincing impartial auditors. Usually each side selects a judge and these two judges agree on a third judge.

Some competent person should serve as a critic of substance, style, presentation, grammar, pronunciation, etc. This may be one of the teachers.

CLASSICS.

(Once each week.)

FIRST YEAR.

Use some standard reader for this material and for shorter selections. Most of the selections listed below and many others may be found in a number of the advanced readers.

Read as much as time permits:

Rip Van Winkle.....	Irving.
Hunting of the Deer and other stories.....	Warner.
Birds and Bees.....	Burroughs.
Robinson Crusoe.....	Defoe.
Christmas Carol.....	Dickens.
Courtship of Miles Standish.....	Longfellow.

Memory selections:

The Last Leaf.....	Holmes.
A Man's a Man for a' That.....	Burns.
Daffodils.....	Wordsworth.

SECOND YEAR.

Man Without a Country.....	Hale.
Legend of Sleepy Hollow.....	Irving.
The Last of the Mohicans.....	Cooper.
Robin Hood.....	Howard Pyle.
Captain, Oh my Captain!.....	Whitman.

Memory selections:

Recessional.....	Kipling.
Gettysburg Address.....	Lincoln.
Ode to a Waterfowl.....	Bryant.

THIRD YEAR.

Merchant of Venice.....	Shakespeare.
Sir Galahad.....	Tennyson.
Webster's Reply to Hayne.	
Silas Marner.....	Elliot.
Memory selections:	
Portions of Vision of Sir Launfal.....	Lowell.
The Chambered Nautilus.....	Holmes.
Opportunity.....	Edward Rowland Sill.

FOURTH YEAR.

The Cloud.....	Shelley.
Autobiography.....	Franklin.
Walden, Where I Lived and What I Lived For.....	Thoreau.
Captains of Industry.....	James Parton, Vols. I and II.
Stories of Useful Inventions.....	S. E. Forman.
Memory selections:	
"The Quality of Mercy," Portia's address	
from "The Merchant of Venice".....	Shakespeare.
Abou Ben Adhem.....	Leigh Hunt.

BUSINESS FORMS.

This is essentially a short course in business English for the farmer, mechanic, and housewife. It aims to fit young men and young women to conduct their own business properly in so far as written instruments are concerned, and to enable them to protect themselves from poorly written contracts, agreements, etc.

SECOND YEAR.

(Once each week, first term, classroom period.)

Contracts:

They may be either oral or written.

What constitutes consideration?

Parties to contract.

Those competent.

How a contract is made.

Offer and acceptance.

Transfer of property:

Bailment—

 Title does not pass.

 Example of bailments.

Sale—

 Title passes.

 Parties—Seller and purchaser.

 Seller must have title.

Transfer of property—Continued.

When does title pass?

Bill of sale.

Mortgage.

Express warranty in sale.

Negotiable papers:

Essentials—

Writing.

Signed.

Negotiable in form; use of words "or order," "or bearer."

Payable in money.

Amount certain.

Payable absolutely.

Payee.

Time.

Kinds—

Promissory notes.

Checks.

Indorsement—

Blank.

In full.

Without recourse.

Obligation of indorsers.

Discharge.

Interest and usury.

Agency:

Who may be agent.

General agent.

Special agent.

Relation of principal and agent.

Liability of principal for act of agent.

Partnership:

How formed—

One partner can bind the firm as maker or indorser of negotiable papers.

Each partner liable for all the debts of the partnership.

Real property:

Estate in land.

Fee simple.

Life estate.

Curtesy.

Dower.

Sale of land:

By deed—

Conditions of deed.

Property to be conveyed.

Words of conveyance.

Description of property.

Signed and sealed.

Delivery and acceptance.

Acknowledgment or witnesses.

Warranty.

Quitclaim.

Lease of land:

Terms and conditions.

Wills:

Form.

Essential requirements.

SPELLING.

FIRST YEAR.

Basic text for this grade.

Master also 10 words per week from words encountered in the subjects outlined under English or other subjects, including also other new words experienced by pupils in the industrial departments.

SECOND YEAR.

Basic text for this year.

Master also 10 words per week from words used in the subjects outlined under English or other subjects, including words encountered by pupils in the industrial departments.

Toward the end of the work in this year test vocabularies by the method here given. This to be used as a basis for grading, rating, and future expansion of vocabularies.

A VOCABULARY TEST.

The only way to find out the exact number of words for which you know the meaning is to go through the dictionary and count them. This is likely to take more time than the knowledge is worth. A college professor has devised a way to estimate the size of anyone's vocabulary. It has been used as a test for hundreds of schools, and has proved accurate enough for all practical purposes.

Here is a list of 100 words selected from a dictionary containing the 18,000 most frequently used words in the English language. Read over the list slowly and carefully. After every word, the meaning of

which you know perfectly, place the sign +. After every word you are sure you do not know, place the sign —. When you find a word you think you know, but of which you are not quite sure, write it on a sheet of paper and after it write the meaning you think is the right one. The words on this sheet make up the doubtful list.

When you have gone through the 100 words in this way verify your definitions of the doubtful words by the use of a dictionary. Mark each correctly written definition with a plus sign, each incorrect one with a minus sign. Count the total number of plus signs in the entire list, and multiply that number by 180. The result will be the number of words in your vocabulary.

To illustrate: If there are 60 plus signs in all, you know the meaning of 60×180 , or 10,800 words. If the number of plus signs is 45, you know about 45×180 , or 8,100 words.

One other point: It is not necessary in order to be correct that your written definitions should read exactly like those in the dictionary. Mark a definition + if it gives a good general idea of what the word means. Moreover, it is not necessary to know all the meanings of a word; one correct meaning is enough. But take care not to mark the word + unless you are sure you know at least one correct meaning of it.

When you try this list on yourself or test a child by it you will find that the words in the first part are fairly easy, but that they get harder as you advance. This is the principle to remember if you choose a list of your own:

- | | | |
|-----------------|--------------------|-----------------------|
| 1. arrange. | 35. misuse. | 69. embody. |
| 2. bonfire. | 36. insure. | 70. snip. |
| 3. envelope. | 37. brunet. | 71. flaunt. |
| 4. gown. | 38. regard. | 72. harpy. |
| 5. haste. | 39. shrewd. | 73. sportive. |
| 6. afloat. | 40. crunch. | 74. disproportionate. |
| 7. eyelash. | 41. juggler. | 75. apish. |
| 8. copper. | 42. hysterics. | 76. achromatic. |
| 9. guitar. | 43. repose. | 77. ambergris. |
| 10. curse. | 44. Mars. | 78. cameo. |
| 11. health. | 45. majesty. | 79. casuistry. |
| 12. mellow. | 46. dilapidated. | 80. complot. |
| 13. rule. | 47. mosaic. | 81. declivity. |
| 14. straw. | 48. nerve. | 82. exaltation. |
| 15. tap. | 49. forfeit. | 83. fen. |
| 16. scorch. | 50. peculiarity. | 84. hookah. |
| 17. puddle. | 51. artless. | 85. incrustation. |
| 18. pork. | 52. avarice. | 86. infuse. |
| 19. plumbing. | 53. bewail. | 87. laity. |
| 20. impolite. | 54. charter. | 88. limpet. |
| 21. roar. | 55. conscientious. | 89. ochre. |
| 22. treasury. | 56. depredation. | 90. paleology. |
| 23. noticeable. | 57. frustrate. | 91. parterre. |
| 24. outward. | 58. gelatinous. | 92. perfunctory. |
| 25. southern. | 59. milksop. | 93. piscatorial. |
| 26. civil. | 60. philanthropy. | 94. precipitancy. |
| 27. easterly. | 61. priceless. | 95. retroactive. |
| 28. lecture. | 62. promontory. | 96. sapient. |
| 29. quake. | 63. swaddle. | 97. selectman. |
| 30. reception. | 64. tolerate. | 98. shagreen. |
| 31. ramble. | 65. irony. | 99. sudorific. |
| 32. skill. | 66. lotus. | 100. theosophy. |
| 33. stave. | 67. coinage. | |
| 34. muzzle. | 68. drabbie. | |

PHYSIOLOGY AND HYGIENE.

The time under these four years should be devoted to reading and general discussion in class of the practical information and problems presented in such current publications as (1) the health bulletins of the United States Public Health Service, (2) health bulletins issued by life insurance companies, (3) bulletins issued by the Child Welfare Bureau of the United States Government, (4) and bulletins of the various State boards of health—especially those of the State in which the school is situated. The time allotted can not possibly be better used than in the manner indicated. This puts the student at once into personal and immediate touch not only with the great health movements and problems, but also in touch with the manner and method of actual solution of such problems largely by and through the fundamental principles which the student himself has learned in his lower grades.

HISTORY.

During the first two years it is planned to use a textbook in United States history for the basis of the work. It should cover the entire period of United States history, but from it should be excluded detailed studies of battles and wars, and political and financial legislation difficult to understand.

During the first year and the second term of the second year this work is made a part of the reading course under the subject of English and is limited to one recitation each week. During the first term of the second year five periods per week of 30 minutes each will be devoted to the formal study of history.

During the first year the course covers those periods in United States history from the discovery of America to and including the Revolution. The second year will cover those periods beginning with the adoption of the Constitution and continuing to the present time.

It is suggested that throughout this course emphasis should be placed on the territorial growth of the country and industrial development. The third and fourth years will be devoted entirely to industrial history.

The following outlines are suggestive and should be used in the development of the subject as time permits:

FIRST YEAR.

Discovery of the New World:

Trade routes to India.

Columbus plans a new route.

Columbus seeks aid from Spain.

His voyage and discovery of land.

Other explorers who reached the New World:

John and Sebastian Cabot reached mainland.

Balboa discovers Pacific Ocean.

Magellan and the trip around the world.

Ponce de Leon explores Florida.

De Soto reaches the Mississippi.

Cartier discovers the St. Lawrence.

Attempts at settlement in America:

- French in South Carolina and Florida.
- Spaniards founded St. Augustine.
- English settlement on Roanoke Island.
- Virginia charter and the settlement at Jamestown.
- Settlement of the English at Plymouth.

The colony at Jamestown under the rule of John Smith:

- Prosperity of the colony.
- Slavery introduced.
- Effect of tobacco planting.
- Social and commercial life in the colonies.

The settlement of Maryland under Lord Baltimore:

- Growth of the colony and development of civil government.

The English in New England:

- Voyage of the *Mayflower* and the landing of the Pilgrims.
- Their suffering during the first winter.
- Immigration of Puritans and settlements at Salem and Boston.
- Roger Williams founded Rhode Island.

Social conditions:

- Trade and commerce in the colony.
- Scarcity of money.
- Manufacturers.
- Their homes, villages, and schools.

The Dutch in New York:

- The fur trade.
- The patroon.

The settlement of Pennsylvania by William Penn and founding of Philadelphia:

- Penn's treaty with the Indians.
- The settlement of North and South Carolina.
- The settlement of Georgia by Oglethorpe.
- A study of the colonies.
- Navigation acts passed by England.
- Colonial governors.

Local government in the Colonies:

- Town meetings in New England.
- Counties in the South.
- No representation in Parliament.
- Growth of population.

Life in the towns or States:

- Methods of travel and communication.
- Newspapers and printing.
- Education.
- Sports and pastimes.
- Manufacturers and commerce.

- The French in Nova Scotia and the explorations of Champlain.
- Exploration of the Mississippi River.
- Dispute between the French and the English over territory:
 - The French in the Ohio Valley.
 - The Ohio Company.
 - Washington's trip to the Ohio Valley.
- The French driven from America:
 - Franklin's plan of union of the Colonies.
 - War with France.
 - Results of that war.
- Trouble between the Colonies and England:
 - Trade law.
 - Smuggling.
 - Stamp act.
 - Boston massacre.
 - Boston Tea Party.
- Beginning of the Revolutionary War:
 - Battle of Lexington.
 - Fight at Concord.
 - Washington placed in command of the Armies.
 - Declaration of Independence.
 - Suffering of the colonists during the Revolutionary War.
 - Battle of Saratoga.
 - Aid from France.
 - How the colonists fought in the South.
 - Arnold's treason.
 - Battle of Yorktown and the end of the war.

SECOND YEAR.

- Articles of Confederation:
 - Their weakness.
 - Government of the Northwest territory.
- Constitutional convention:
 - Ratification of the Constitution.
 - General provisions of the Constitution.
 - Establishment of the Government under the Constitution.
- Condition of our country in 1789:
 - Population.
 - National debt.
 - Life in the cities.
 - Lack of conveniences.
 - Newspapers, books, schools, and colleges.
 - Methods of travel.
 - Slavery.

Condition of our country in 1789—Continued.

Principal industries of northern colonies, of the middle colonies, and of the southern colonies.

Admission of new States.

Revenue laws.

Difficulties under the new Constitution.

Our neutrality in the war between France and England.

Impressment of our seamen.

Difficulties with both England and France.

Industrial development under the Constitution—

(a) The cotton gin.

(b) The steamboat.

(c) Growth of population in the West.

(d) The sale of public land.

(e) Purchase of Louisiana.

(f) Lewis and Clarke expedition.

Foreign affairs and trade regulations:

Congress retaliates against France and England—

(a) Embargo act.

(b) Nonintercourse act.

(c) Beginning of the War of 1812.

(d) War on the Canadian frontier (Perry's victory).

(e) War along the Atlantic seaboard.

(f) War on the Gulf and sea.

(g) Hartford convention and the close of the war.

Growth of the West after 1814:

Prosperity of the country.

Routes to the West.

Pioneer life.

Admission of new States.

Trade with the West.

Slavery question—

(a) Slavery beyond the Mississippi.

(b) Missouri compromise.

Era of good feeling:

Monroe doctrine.

Tariff.

South Carolina doctrine of nullification.

The great debate between Webster and Hayne.

Antislavery movement.

Antislavery books and papers.

The question of disposition of public lands.

Removal of Indians to western lands.

Building of roads and canals.

Era of good feeling—Continued.

The first railroad.

Ocean steamship lines—

(a) Mechanical development.

Annexation of Texas.

War with Mexico.

Capture of Mexico City and the results of the war.

Discovery of gold in California.

Compromise of 1850.

Division of the country on the question of slavery:

Kansas and Nebraska act.

Personal-liberty laws.

Dred Scott decision.

John Brown at Harpers Ferry and the election of Lincoln.

Condition of our country prior to the Civil War:

Population.

City life.

Schools and colleges.

Literature.

Principal occupation of the people of the North.

Principal occupation of the people of the South.

Telegraph.

Sewing machine.

Harvester.

Atlantic cable.

The Civil War:

Capture of Fort Sumter.

Dividing line between the States of the North and the South.

Peninsular campaign.

Invasion of the North by the southern armies.

Emancipation Proclamation.

Battle of Gettysburg.

March through Georgia.

Campaign against Richmond.

Surrender at Appomattox.

Death of Lincoln.

Condition of the country after the war:

Distress in the South.

Condition of the negro.

Reconstruction of the States.

The thirteenth and fourteenth amendments to the Constitution.

The growth of the country since the Civil War:

Gold and silver mining in the West.

Overland trails to the West.

Railroads.

The growth of the country since the Civil War—Continued.

Further development of the homestead law.

Agricultural resources of the West.

Industrial development of the country.

(a) Corporations.

(b) Immigration.

(c) Great political parties.

(d) Republican Party.

(e) Democratic Party.

(f) Prohibition Party

(g) National Labor Party.

The admission of new States:

The tariff as it affects the North and South.

Australian ballot.

Seal fisheries.

War with Spain.

Acquisition of Philippine Islands, Porto Rico, Hawaii, Guam.

Irrigation projects of the West.

Panama Canal.

Trouble in Cuba.

Pure food and meat inspection laws.

Discovery of the North Pole.

In addition to the work in the textbook it is planned to have the pupils read choice selections of literature which are based upon historical events; as, for example:

"Columbus," Miller.

"Evangeline," Longfellow.

"Landing of the Pilgrims," Hemans.

"Paul Revere's Ride," Longfellow.

"Concord Hymn," Emerson.

"Song of Marion's Men," Bryant.

"Star Spangled Banner," Key.

"Warren's Address to the American Soldiers," Pierpont.

"Old Ironsides," Holmes.

"Speech of James Otis," Child.

"Conciliation or War," Burke.

"The Rising in 1776," Read.

"Independence Bell, Philadelphia," anonymous.

"Nathan Hale," Finch.

"The Memory of Washington," Everett.

"The Ship of State," Longfellow.

"Sheridan's Ride," Read.

"My Captain, O My Captain," Whitman.

"Lincoln, the Man of the People," Markham.

"Barbara Frietchie," Whittier.

"The Blue and the Gray," Finch.

"The American Flag," Drake.

"The Name of Old Glory," Riley.

"Gettysburg Address," Lincoln.

INDUSTRIAL HISTORY.

THIRD AND FOURTH YEARS.

(Once a week.)

This course is designed to acquaint pupils with the economic development of the United States and, to a less extent, of other countries. It is made to center around the great industries.

Books on annual estimate may be very largely supplemented by using bulletins and treatises prepared by the various departments of our Government. These are exceedingly valuable and are available for all who can use and will ask for them:

Development of means of transportation and importance of this feature in our economic life.

Inventions of spinning and weaving machinery and their effect upon the economic history of England.

Oil industry in the United States.

Textile industry in the United States.

Sugar beet and the manufacture of sugar.

Coal—its discovery and its usefulness.

Growth of the steel industry.

History of cement and present methods of manufacture.

Salmon fisheries.

Fiber-producing plants.

Growth of the beef-packing industry.

Results of the use of improved farm machinery.

History of irrigation and its present development in the West.

Forest preservation.

Structural material.

History and manufacture of paper.

Petroleum and its products.

Shelter and clothing.

Rural life and its increasing attractiveness.

CIVICS.

FIRST YEAR.

- I. Civil government and its nature.
 - (a) Necessity for government.
 - (b) Civil government and civics.
 - (c) Functions of government.
 - (d) Kinds of government.
 1. State.
 2. Monarchy.
 3. Democracy.
 4. Other forms of government.
 - (e) Constitutions.
 - (f) Departments of governments.
 - (g) Financial needs and resources of government.
 - (h) Review questions on or suggested by the text.

II. Local government:

- (a) Touches the individual more nearly.
- (b) Origin of American local government.
- (c) Origin of the town.
 - 1. The manor.
 - 2. The parish.
 - 3. The shire.
 - 4. The county.
- (d) The importance of local government.
- (e) Review questions on or suggested by the text.

III. Local government:

- (a) The New England town and its beginning.
- (b) The New England county and its beginning.
- (c) The people and conditions in the South.
- (d) The Virginia parish and county.
- (e) Town and county government in New York.
- (f) Town and county government in the Middle Atlantic States.
- (g) Local government in the West.
- (h) The village.

IV. Government of cities:

- (a) The borough.
- (b) The city.
 - 1. Growth and reasons.
 - 2. City charters.
 - 3. Departments of city government.
 - Administrative—
 - Various forms of departments.
 - Police.
 - Fire.
 - Schools and education.
 - Health.
 - Parks and recreations.
 - Streets.
 - Charities and correction.
 - Water.
 - Other lines of activity.
 - Executive—
 - The mayor.
 - Some qualities he should possess.
 - Judicial—
 - The courts and organization.
 - The judges.

Study the organization of your nearest small and nearest large city or town.

V. Some municipal problems:

- (a) Misgovernment in American cities.
- (b) The commission form of government in cities.
- (c) The spoils system.
- (d) City politics compared with State and National politics.
- (e) Municipal home rule.
- (f) City and natural monopolies.
- (g) Municipal ownership:
 - 1. Arguments for.
 - 2. Arguments against.

SECOND YEAR.

I. State government:

- (a) Colonial government and legislatures.
- (b) Origin of State government.
- (c) State constitutions.
 - 1. Early.
 - 2. Present.
 - 3. Written.
 - 4. How amended; some amendments.
- (d) The importance and relation of State governments.
- (e) The bill of rights.

II. State government:

- (a) The executive department.
- (b) The governor.
 - 1. Term.
 - 2. Qualifications.
 - 3. Salaries.
- (c) Other executive departments.
- (d) State administrative boards.
- (e) The State and education.
- (f) Railroad commissions.
- (g) Public-service commissions.
- (h) Public charities and corrections.
- (i) Other administrative boards.

III. State government:

- (a) The legislative department.
- (b) Process of legislation.
- (c) Initiative and referendum.
- (d) The recall.
- (e) Limitations upon State legislatures.
- (f) State privileges guaranteed by the United States.
- (g) Relations of the States to each other.

IV. The State judiciary and judicial trials:

- (a) State courts.
- (b) Selection of judges.
- (c) Impeachment of judges.
- (d) Trial.
 - 1. Early form.
 - 2. Trial by jury.
- (e) Criminal and civil cases.
- (f) Beginning of a criminal trial.
- (g) Trial of a criminal case.
- (h) Trial of a civil case.
- (i) The jury system.
 - 1. Arguments for.
 - 2. Arguments against.

V. Elections and party machinery:

- (a) Suffrage.
- (b) Women suffrage.
- (c) Registration.
- (d) Methods of voting.
- (e) Counting of ballots.

V. Elections and party machinery—Continued.

- (f) Representation.
 - 1. Minority.
 - 2. Majority.
 - 3. Proportional.
- (g) Election districts.
- (h) The caucus and primary.
- (i) Nominating conventions.
- (j) Nomination by petition.
- (k) Party machine.
- (l) The boss.

THIRD YEAR.

I. The Constitution:

- (a) The Federal Republic.
- (b) Departments of the Government.
- (c) System of checks and balances.
- (d) Powers given to the United States Government.
- (e) Implied powers.
- (f) Amendments.
- (g) National Bill of Rights.
- (h) Rarity of amendments.

II. The executive department:

- (a) A single executive.
- (b) Constitutional qualifications.
- (c) Terms of service and salary.
- (d) The powers of the President.
- (e) Executive power.
- (f) The spoils system.
- (g) Civil Service reform.
- (h) Power of removal.
- (i) The President's use of military power.
- (j) War powers of the President.
- (k) Legislative power.
- (l) Treaty-making power.
- (m) Pardoning power.
- (n) Impeachment.
- (o) The Vice President.
- (p) Presidential succession.

III. The nomination and election of President:

- (a) Rise of national and nominating conventions.
- (b) Selection of delegates to a National convention.
- (c) Meeting of a National convention.
- (d) The campaign.
- (e) Presidential electors.
- (f) Election by the House of Representatives.

IV. The Cabinet and executive departments:

- (a) The Cabinet.
- (b) The executive departments.
- (c) Department of State.
 - 1. The diplomatic service.
 - 2. The consular service.
- (d) Treasury Department.
- (e) War Department.

IV. The Cabinet and executive departments—Continued.

- (f) Navy Department.
- (g) Department of the Interior.
- (h) Post Office Department.
- (i) Department of Justice.
- (j) Department of Agriculture.
- (k) Department of Commerce.
- (l) Department of Labor.
- (m) Separate commissions and boards.

V. The National Legislature:

- (a) Congress.
- (b) The Senate.
 - 1. Qualification of Senators.
 - 2. Election of Senators.
- (c) The House of Representatives.
 - 1. Qualification of Representatives.
 - 2. Apportionment of Representatives.
 - 3. Election of Representatives.
- (d) Congressional districts.
- (e) Privileges of Members of Congress.
- (f) Remuneration of Members of Congress.

VI. Organization and methods of Congress:

- (a) Organization of the Senate.
- (b) Organization of the House of Representatives.
- (c) Criticism of the committee system.
- (d) Committee of the Whole.
- (e) The making of a law.
- (f) Filibustering.
- (g) Congressional publications.

VII. The powers of Congress:

- (a) Powers granted to Congress.
- (b) Limitation upon the authority of Congress.
- (c) Limitations upon the powers of Congress and of the States.
- (d) Exclusive powers of
 - 1. The Senate.
 - 2. House of Representatives.

VIII. Relations of Congress to commerce:

- (a) Commercial powers of Congress.
- (b) Commercial treaties.
- (c) The Panama Canal.
- (d) American shipping.
- (e) Interstate commerce.
- (f) Railroad consolidation and resulting problems.
- (g) The Interstate Commerce Commission and its powers.
- (h) Antitrust laws.

IX. Miscellaneous powers of Congress.

- (a) Citizenship.
- (b) Immigration.
- (c) Naturalization.
- (d) Bankruptcy laws.
- (e) Patent and copyright laws.
- (f) Pure food law.

IX. Miscellaneous powers of Congress—Continued.

- (g) Military and naval powers.
 - 1. The Army.
 - 2. General staff of the Army.
 - 3. The militia.
 - 4. The Navy.

FOURTH YEAR.

I. Financial and monetary systems of the United States:

- (a) Public finance.
- (b) Public expenditures.
- (c) Public revenues.
- (d) Direct and indirect taxation.
- (e) The sixteenth amendment to the constitution, permitting Federal direct taxation.
- (f) Federal taxes on imports.
- (g) Excise taxes.
- (h) State and local taxation.
- (i) Taxes on property.
- (j) Poll taxes.
- (k) Corporation taxes.
- (l) Franchise taxes.
- (m) Inheritance and income taxes.
- (n) Other local sources of income.
- (o) Exemptions from taxation.
- (p) Public debt.
- (q) Local debt.
- (r) United States money.

II. Federal judiciary:

- (a) Necessity of Federal courts.
- (b) Jurisdiction of Federal courts.
- (c) The eleventh amendment.
- (d) The Supreme Court.
- (e) Inferior Federal courts.
- (f) District courts.
- (g) Circuit courts.
- (h) Court of Customs Appeal.
- (i) Commerce court.
- (j) Court of Claims.
- (k) Appointment of Federal judges.
- (l) Court officers.
- (m) Relation between State and Federal courts.

III. The Government of Territories and dependencies:

- (a) The National domain.
- (b) Land policy of the United States.
- (c) Results of the public land policy.
- (d) Government of organized Territories.
- (e) How a Territory may become a State.
- (f) District of Columbia.
- (g) Porto Rico.
- (h) The Philippines.
- (i) Guam and Tutuila.

IV. Read the Constitution of the United States.

V. Read the constitution of your State.

VOCATIONAL ARITHMETIC.

(Forty minutes daily.)

FIRST YEAR.

The work of the primary and prevocational divisions covers the essential processes: Addition, subtraction, multiplication, and division, with integers; common and decimal fractions used in business; percentage in its most common applications; useful measurements.

Accuracy in computing is dependent upon the mastery of the fundamental facts; this mastery is acquired by much practice in process work; therefore, although the essential processes are covered in the primary and prevocational divisions it is necessary to continue to give opportunity for constant practice.

Much of the work should grow out of the child's immediate environment and current interests. The teacher should be continually on the watch for suitable material for problems. Indian schools are especially fruitful sources for obtaining such material, because the scope of activities of each school includes the majority of all the ordinary community interests.

To give a sense of reality to the problems the work of the first and second years of the vocational division is made to relate to the activities involved in the obtaining, improvement, equipment, and maintenance of a home. This grouping around the home appeals to the experiences of the pupils and at the same time gives opportunity to teach important lessons about the ideal American home and all the problems centered about and related to it. These lessons are especially important for Indian children.

Suggestions for problems:

- (a) Have the pupil ascertain the value per acre of land in his neighborhood. With that in view, have him compute the value of his allotment without any improvements; if he does not have an allotment, determine the value of a farm of average size in his section of the country. Make a map of the farm; divide it into fields and lots for buildings, corrals, garden, and orchard. Give dimensions and acreage in each field. Estimate the cost of fencing the fields and lots, using material available in the locality of the pupil's home.

Suggestions for problems—Continued.

- (b) Make an itemized list of the necessary tools, implements, and machinery for the equipment of a farm and compute the cost at current market prices.
- (c) Estimate the cost of live stock necessary or desirable to have in starting a farm.
- (d) With the assistance of the school mechanics prepare a bill of materials for a house of not less than four rooms. Estimate cost of materials. Compute cost of excavating wall trenches and a cellar under kitchen; cost of labor on walls of concrete, of stone, of brick; cost of labor for carpentry, painting, plastering, papering dining room and bedrooms; cost of equipment for kitchen, dining room, two bedrooms. Give similar problems in planning and building horse and dairy barns and other outbuildings, walks, and improvements.
- (e) Compute cost of excavating for and constructing a cistern, cylindrical in shape, 8 feet in diameter (inside walls), 12 feet deep, walled and covered with concrete. Give capacity of cistern.
- (f) Compute cost of drilling and curbing or casing a 6-inch well 50 feet deep.
- (g) Give problems relating to plowing, planting, cultivating, fertilizing, irrigating, drainage, harvesting and thrashing farm crops; feeding live stock, poultry. Make market charts showing current prices; buying and selling eggs, chickens, turkeys, milk, cream, butter, vegetables, fruit, wheat, oats, corn, hay, cattle, horses, hogs, sheep, wool, fish, baskets, blankets, beadwork, pottery, groceries, dry goods, clothing, shoes, furniture, carpets, farm implements, tools, conveyances, harness, saddles, seeds, lumber, wood, coal, etc.
- (h) Give problems in shipping by parcel post, express, or freight; compute commissions, profit and loss; insurance, taxes, etc.
- (i) Estimate miscellaneous family expenses such as buying books, magazines, papers, paying entertainment, lecture, recreation, and traveling expenses; charity obligations; life insurance premiums; doctors' bills; school expenses such as tuition, board, room, washing.

These every day problems should be varied and extended so as to include as many as practicable of the actual experiences of people of moderate circumstances especially in rural life.

SECOND YEAR—FIRST TERM.

BUSINESS FORMS AND ACCOUNTS.

During this term the simple principles of business and of accounting should be taught, and applications should be made to the various vocations represented by having the members of the class keep farm accounts, shop accounts, household accounts, etc.

Teach meaning of: Monthly statements, bills, inventory, assets, liabilities.

Have pupils make an inventory, in good form, itemizing the equipment, etc., of the schoolroom, of the school kitchen, of the sewing room, of the carpenter shop, of the blacksmith shop, of the dairy barn, of the horse barn.

Teach the meaning of: Receipts, disbursements, expenditures, balance.

Have pupils open a book for keeping a record of receipts, expenditures, balances, in proper form. (Use some very simple form.)

Teach pupils to balance book daily, weekly, monthly, or yearly.

Give much practice in writing and in the use of common business forms and business letters.

Give drills in opening a bank account:

- (a) Filling out deposit slips.
- (b) Filling out and indorsing checks.
- (c) Keeping a record of deposits and withdrawals.

Study methods of sending money:

- (a) By postal money orders.
- (b) By registered mail.
- (c) By checks and drafts.
- (d) By telegram.

Saving and investing money:

- (a) Savings banks.
- (b) Real estate.
- (c) Investments in business.

Money at interest; computing interest.

Taxes; real estate; personal property.

- (a) Make problems using local tax rate.

SECOND YEAR—SECOND TERM.

Study of useful measurements:

- (a) Computing areas of quadrilaterals, triangles, circles.
- (b) Finding cubical contents or volume of boxes, bins, mows, silos, cisterns, etc.

(c) Measuring heat (thermometer); air pressure (barometer); power in machines (the lever, the inclined plain); velocity of sound and light; gas and electricity (gas meters, electric meters).

Use of symbols.

Expressing equations.

Reading equations.

Solution of equations, involving one or two unknown quantities, so far as these are necessary in the solution of simple problems and in the handling of formulæ commonly found in handbooks and books of reference for trade workers. Apply these principles in the solution of practical shop problems.

INDUSTRIAL GEOGRAPHY OF THE UNITED STATES.

(Twenty weeks, 30 minutes daily.)

The study of industrial geography not only enlightens the pupil as to the distribution of the products of your country and the means employed to bring them to him in usable form, but also shows him how dependent each member of society is upon the other.

Since the condition of mutual dependence exists it easily follows that every person should be interested in the welfare of every other person. By keeping this idea constantly present, the subject becomes one of great interest and utility.

I. General view of the subject.

II. Position and size of the country.

III. Surface and drainage:

(a) Coastal plain.

(b) Appalachian highland.

(c) Rocky Mountain.

(d) Central plain.

IV. Climate:

(a) Modifiers—

1. Latitude.

2. Altitude.

3. Mountains.

4. Winds.

5. Distance from sea.

6. Ocean currents.

7. Rainfall.

(b) Effects upon plant distribution.

V. Soil.

VI. Transportation:

(a) Waterways—

1. Oceans.

2. Lakes.

3. Rivers.

4. Canals.

5. Study the principal shipping points.

(b) Railways—

1. Trace the principal railway systems and study principal terminal cities.

VII. Cereals:

NOTE.—In the study of all cereals use the outline below.

(a) Wheat:

1. Location of wheat areas and reason. (Color wheat areas on outline map.)
2. Economic importance of wheat and its products.
3. Kinds.
4. Yield.
5. Markets (location, outline map).
6. Locate other wheat regions of the world.

(b) Corn.

(c) Rice.

VIII. Sugar:

(a) History.

(b) Kinds, where produced, and from what plants obtained.

1. Corn.
2. Beet.
3. Maple.

(c) Manufacture.

(d) Markets.

NOTE.—Locate sugar areas and markets on outline map in color.

IX. Textiles:

(a) Cotton.

1. Areas.
2. Varieties.
3. Markets.
4. Manufacturing centers.

(b) Flax and linen.

(c) Silk.

X. Fruit:

(a) Apples.

(b) Peaches.

(c) Prunes.

(d) Oranges.

(e) Lemons.

(f) Grapes.

NOTE.—Locate principal areas and markets and study economic value and products of each of the above.

XI. Cattle:

(a) Principal areas.

(b) Marketing.

(c) Packing houses.

(d) Products:

1. Beef.
2. Hides, etc.
3. Dairy products.

XII. Sheep:

- (a) Principal areas.
- (b) Herding and shearing.
- (c) Woolen manufacturing.
- (d) Slaughtering and packing.
- (e) Marketing.

XIII. Lumbering and allied industries:

- (a) Timber areas.
- (b) Converting trees into lumber.
- (c) Cities connected with lumber industry.
- (d) Uses of lumber.
- (e) Value of lumber products.
- (f) Forest Service.

XIV. Fisheries:

- (a) Regions—
 - 1. Cod.
 - 2. Salmon.
 - 3. Mackerel.
 - 4. Oysters.
 - 5. Seals, etc.
- (b) Fish commissions.

XV. Coal:

- (a) Formation.
- (b) Areas.
- (c) Mining.
- (d) Uses.
- (e) Shipping centers.

XVI. Iron:

- (a) Areas.
- (b) Mining.
- (c) Manufacturing and shipping centers.

XVII. Gold, silver, copper, etc.

XVIII. Petroleum and its products.

AGRICULTURE.

When Columbus discovered America he found the Indians living in villages and engaged in farming. They had made corn and tobacco the two great common staples of agriculture on the Western Continent. At that time the Indian was probably the largest owner of live stock in the world. With millions of acres of grazing lands over which grazed many large herds of buffalo, the Indians of the plains formed the first great beef trust of America. Farming and stock raising are therefore his racial inheritance.

It would be unjust as well as unwise to leave the Indian without proper education and training to enable him to utilize his land and become a producer. This course in agriculture has been planned with the vocational aim definitely in view. Agriculture is the important and determining work, the nucleus about which the academic work is arranged. The character and amount of the academic work is determined by its relation to the problems of agriculture and its vital necessity to the future Indian farmer and citizen. The aim is to produce not a scientist nor a specialist, but a practical, efficient farmer—one whose success will depend fully as much upon his skill in doing as upon scientific knowledge. The course includes all of the work which is found on the ordinary diversified farm. This should fit the student to return to his own land and adapt himself to surrounding conditions, whatever they may be, and successfully undertake the type of farming which must be followed there.

The success in developing skill and managerial ability, so essential to the modern farmer, depends very largely upon the helpful relation between the work on the farm, garden, dairy, greenhouse, orchard, etc., and the instruction given in the classroom. The conditions at our Indian schools make such a relation practicable. This course has been so planned as to take the best possible advantage, seasonal and otherwise, of the opportunity for relating classroom and industrial work.

Actual farm practice should not be limited to the term during which a subject is being pursued in class, but, as far as possible, should be continued throughout the year, to enable students to become fully acquainted with all phases of the work. The emphasis on practical farm work should not entirely take the place of formal laboratory work.

Wherever laboratory exercises are necessary to a thorough understanding of simple scientific principles, they should be given entirely separate from the actual farm work; for example, experiments illustrating capillarity in soils, puddling of soils, percolation of water,

testing seeds, judging grain, testing milk, etc. Because of the opportunity for doing real farm and garden work with farm equipment the amount of material and apparatus needed for laboratory work is not great. Of the special apparatus required much may be made in the school shops. Bins for the different types of soils, corn racks, and testing boxes, brooders for poultry work, etc., should all be made in the school carpenter shop.

Ample facilities for library reference work should be provided. This is of special importance in most nonreservation schools because of the varied conditions and agricultural practices existing in the widely scattered homes of the student body. Each school should be on the mailing list of the experiment stations of the United States Department of Agriculture. This will bring to the school library the latest and best scientific information and agricultural practice. These bulletins should be arranged, classified, and indexed so as to make them readily accessible for student reference. The best and most important of them should be obtained in numbers sufficient to be used as supplementary texts by pupils.

Some of the best of the farm papers and magazines should be included in the list of periodicals that come regularly to the school library.

AGRICULTURAL BOTANY.

The purpose of this subject is to give pupils such a knowledge of plant growth as will enable them, first, to understand it and later to apply what they learn to crop production; it is not the usual course in scientific botany. Wherever possible the materials and illustrations should be the economic plants of the farm.

FIRST YEAR.

(Twenty weeks, 30 minutes daily.)

I. The seed:

(a) Storage of food.

(b) Types—

1. Corn.

2. Bean.

3. Castor bean.

4. Squash.

(c) Distribution—

1. Wind.

2. Water.

3. Animals.

4. Propulsion.

II. Germination and growth.

III. The root:

- (a) Osmosis.
- (b) Structure.
- (c) Work.
- (d) Forms.

IV. The stem:

- (a) Forms and growth.
- (b) Modifications.
- (c) Structure—
 - 1. Monocotyl.
 - 2. Herbaceous dicotyl.
 - 3. Woody stemmed dicotyl.
- (d) Work—
 - 1. Mechanical support and framework.
 - 2. Water carrying.
 - 3. Storage of foods.
- (e) Wood structures in relation to industrial uses—
 - 1. Heart wood and sap wood.
 - 2. Ways of cutting and sawing.
 - 3. Knots.
- (f) Forestry—
 - 1. Objects.
 - 2. Enemies of forest—
 - Fires.
 - Recklessness of man.
 - Fungi.
 - Insects.
 - Animals that eat seeds and young, tender growth.
 - 3. Protection of forests.
 - 4. Usefulness of forests.

V. Branches and buds:

- (a) Modes of branching.
- (b) Branching of flower stems.
- (c) Buds—
 - 1. Leaf.
 - 2. Flower.

VI. The leaf:

- (a) Parts.
- (b) Attachments.
- (c) Arrangement.
- (d) Shape and margin.
- (e) Veining and lobing.
- (f) Structure.

VI. The leaf—Continued.

(g) Work—

1. Transpiration.
2. Respiration.
3. Food making.

(h) Adjustment to external relations—

1. To light.
2. To air.
3. To moisture.
4. To temperature.
5. To attacks of animals.

VII. The flowers:

(a) Parts, and uses of parts—

1. Calyx, sepals.
2. Corolla, petals.
3. Stamens.
4. Pistil.
5. Peduncle.
6. Receptacle.

(b) Function and work—

1. Production of fruit and seed.

(c) Fertilization—

1. Self-fertilization.
2. Cross-fertilization.
3. Pollination.
 - Prevention of self-pollination.
 - Wind pollination.
 - Insect pollination.
 - Adaption of flower to cross-fertilization.

VIII. The fruit:

(a) What it is.

(b) Fleshy fruits—

1. Pome—apple, pear, quince.
2. Pepo—melons, pumpkins, squashes.
3. Berry—grape, cranberry, tomato, currant, gooseberry, lemon.
4. Drupe—peach, plum, cherry, dogwood.

(c) Dry fruits—

1. Nuts—acorn, hickory, walnut, chestnut, pecan, filbert.
2. Pods—pea and bean pods, larkspur capsules, cotton, milk-weed.
3. Grains—corn, wheat, oats, rice.
4. Akenes—sunflower, thistle, dandelion, buckwheat, cle-matis.

IX. Spore-bearing plants:

- (a) Place in plant development.
- (b) Mode of reproduction—
 - 1. Distinguish between seed and spore.
- (c) Classes—
 - 1. Algae—
 - What they are.
 - Forms.
 - Reproduction.
 - 2. Fungi—
 - What they are.
 - Methods of reproduction of each.
 - Bacteria.
 - Yeasts.
 - Rusts.
 - Mushrooms and toadstools.
 - Economic importance.
 - 3. Lichens—
 - What they are.
 - Methods of reproduction.
 - 4. Mosses.
 - 5. Ferns.

FARM IMPLEMENTS.

Formal instruction should be given largely during the first year, yet some instruction should be given at other times throughout the course. For instance, the study and operation of the ensilage cutter should be given to second-year boys as well as to first-year boys, since second-year boys will be doing the practical work with the cutter.

The instruction should not be limited to the tools used on the school farm, but these should be taken as a basis for comparison. Catalogues of the different farm-machinery companies may be used to advantage.

FIRST YEAR.

(Forty weeks, 1½ hours per week.)

In considering each of the farm implements named below, attention is to be paid to the following points: Essential parts, construction, cost, use, and care:

I. Tillage machinery:

- (a) Plows—
 - 1. Classes—stubble, sod.
 - 2. Kinds—walking, sulky, and gang; disk.

I. Tillage machinery—Continued.

(b) Harrows—

- Spike toothed.
- Spring toothed.
- Knife toothed.
- Disk.
- Roller.
- Planker.

(c) Cultivators—

- 1. Walking—tongue, tongueless.
- 2. Riding—single row, double row, weeders.

II. Seeding machinery:

(a) Seeders.

(b) Drills—

- 1. Single disk.
- 2. Double disk.
- 3. Hoe.
- 4. Shoe.

(c) Corn planters—

- 1. Surface planters.
- 2. Listers.

III. Harvesting machinery:

(a) Grain harvesters—

- 1. Self-binders.
- 2. Headers.
- 3. Combined harvesters and thrashers.

(b) Corn binders.

(c) Mowers.

(d) Rakes—

- 1. Dump.
- 2. Side delivery.

(e) Loaders—

- 1. Rake.
- 2. Endless apron.

(f) Stackers.

(g) Sweep rakes.

IV. Manure spreaders.

V. Ensilage cutters:

(a) Knives.

(b) Fillers.

VI. Feed mills:

(a) Sweep mills—

- 1. Straight drive.
- 2. Geared.
- 3. Combination.

VI. Feed mills—Continued.

(b) Power.

(c) Buhrs—

1. Duplex.
2. Disk.
3. Cone.
4. Cylinder.

VII. Wagons.

VIII. Buggies.

IX. Pumping machinery:

(a) Suction pumps.

(b) Force pumps.

X. Farm motors:

(a) Windmills.

(b) Gas engines.

SOILS AND SOIL FERTILITY.

This course should be made as extensive and practical as possible. Special attention should be given to humus content, types of soils, soil moisture, soil temperature, plant food in the soil, tillage, and soil management. Emphasis should be placed on the management of soils, so as to maintain fertility and physical condition of tilth, and to prevent washing and blowing. Samples of soils and some simple apparatus should be made available for laboratory exercises.

SECOND YEAR.

(Twenty weeks, 30 minutes daily.)

I. Conditions essential to plant growth:

(a) Factors influencing germination—

1. Moisture.
2. Temperature.
3. Oxygen.

(b) Factors influencing growth after germination—

1. Food material taken from the soil.
2. Food material taken from the air.
3. Formation of carbohydrates and proteins.
4. Relation of the elements to production of food constituents.
5. Relation of air, water, light, and temperature to plant growth.

II. Origin and classification of soils:

(a) What is soil and of what composed—

1. Organic matter.
2. Inorganic matter.

II. Origin and classification of soils—Continued.

(b) Soil formation—

1. Agencies—

Disintegration.

Decomposition.

(c) Classes as to origin—

1. Residual.

2. Glacial.

3. Wind formed.

4. Alluvial.

5. Humus.

6. Volcanic ash.

(d) Soil and subsoil.

(e) Influence of climate on soils.

III. What the plant requires of the soil:

(a) Permeability to roots.

(b) Water-holding capacity.

(c) Plant food.

IV. Nitrogen in the soil.

(a) Sources.

(b) Change of organic nitrogen to nitrates.

1. Caused by what.

2. Influence of temperature.

3. Inoculation.

4. Importance of nitrogen.

V. Soil analysis.

(a) Laboratory.

1. Reaction—acid, alkaline, or neutral.

2. Total organic matter.

(b) By plants.

1. The pot test.

2. Plat or field test.

VI. Farm manures.

(a) Contents.

1. Carbon.

2. Hydrogen.

3. Oxygen.

4. Nitrogen.

5. All mineral constituents of plants.

(b) Changes occurring in manures.

1. Carbon compounds.

2. Nitrogen compounds.

(c) Losses by leaching.

VI. Farm manures—Continued.

(d) Value of manure influenced by—

1. Feed of animal.
2. Age of animal.
3. Kind of animal.
4. Product from animal.
5. Kind and amount of bedding used.
6. Care of the manure.

(e) Handling.

1. Losses from exposure.
2. Use of manure shed.
3. Direct application to soil.
Top-dressing.
Plowing under.
4. The manure spreader.

(f) Benefits of.

1. Adds plant food.
2. Adds bacteria.
3. Improves soil physically.

VII. Commercial fertilizers.

(a) Varieties.

1. Nitrogen.
2. Phosphorus.
3. Potassium.

(b) Benefits.

(c) Disadvantages.

VIII. Soil texture classification.

(a) Coarse sand.

(b) Sandy loam.

(c) Fine sandy loam.

(d) Silt loam.

(e) Clay loam.

(f) Clay soil.

(g) Influence of tillage.

IX. Water supply in the soil.

(a) Importance of water in soil.

(b) Three forms.

1. Drain.
2. Capillary.
3. Hygroscopic.

(c) Influence of cultivation on water-holding capacity.

(d) Movements.

1. Percolation.
2. Seepage.
3. Capillary rise.
4. Influence of crust and soil mulch on losses of water.

X. Drainage.

(a) Importance.

(b) Benefits.

1. Improves ventilation.
2. Makes larger amount of water available.
3. Allows earlier and better working.
4. Favors necessary chemical processes.

(c) Kinds.

1. Surface drainage.
2. Under drainage.
3. Materials, implements, instruments, plan, and process used in making drainage systems.

XI. Erosion.

(a) Evils.

(b) Causes.

(c) Prevention.

XII. Tillage.

(a) Influence upon soil.

XIII. Humus.

(a) What is it.

(b) Function.

(c) How to prevent loss.

1. Pastures and meadows.
2. Green manures.
3. Farm manures.
4. Rotation of crops.

XIV. Dry farming.

(a) Where practiced.

(b) Purpose.

(c) Implements required.

(d) Cultivation required.

(e) Method of seeding.

(f) Crops grown.

(g) History and importance.

HORTICULTURE.

The aim of this course is to give students a general practical knowledge of fruit growing. Special emphasis should be placed on the selection of a site; preparation of ground for planting; selecting varieties of trees; ordering, receiving, and heeling in trees; planting; care of trees; tillage; pruning young and old trees; spraying and insect control; grafting, budding, and making cuttings; bush fruits and strawberries.

The English classes should give practice in writing orders for trees, spraying materials, finding prospective buyers for surplus products, notice of shipment, etc.

SECOND YEAR.

(Forty weeks, $1\frac{1}{2}$ hours per week.)

I. Propagation:

(a) Implements.

(b) Methods.

1. Root grafting.

2. Side grafting.

3. Nurse grafting.

4. Budding.

5. Cleft grafting.

(c) Influence of stock on scion.

(d) Stocks for various fruits.

(e) Propagation versus buying for the orchardist.

II. Planting:

(a) Planting distances for various fruits.

(b) Double planting and interplanting.

(c) Laying out ground.

(d) Setting out trees.

(e) Fall versus spring planting.

III. Management:

(a) Cultivation.

(b) The cover crop.

(c) Use of fertilizers.

(d) Fertilizers for special fruits.

IV. Pruning:

(a) Purposes.

1. To shape tree.

2. To restrict growth.

3. To keep heads open.

4. To encourage new growth.

5. To regulate fruit bearing.

(b) Fundamental principles.

(c) Time to prune.

(d) Painting wounds.

(e) Pruning for planting.

(f) Height for heading young trees.

(g) Shaping the tree.

(h) General methods.

(i) Tools.

V. Spraying:

- (a) Mixtures.
- (b) Machinery.

Further consideration of spraying under: "Plant Diseases"
and "Insects and Insecticides."

VI. Choosing varieties of fruit:

- (a) Apple.
- (b) Peach.
- (c) Pear.
- (d) Plum.
- (e) Cherry.
- (f) Apricot.
- (g) Small fruits.
 - 1. Blackberry.
 - 2. Raspberry.
 - 3. Currant.
 - 4. Loganberry.
 - 5. Strawberry.
 - 6. Grape.

VII. Renovation:

- (a) When profitable.
- (b) How.
 - 1. Pruning.
 - 2. Scraping.
 - 3. Grafting.
 - 4. Spraying.
 - 5. Cultivating.
 - 6. Fertilizing.
 - 7. Cover cropping.

VIII. Picking fruit:

- (a) Time.
- (b) Receptacles.
- (c) Methods and conveniences.

IX. Grading and packing.

X. Storage:

- (a) Refrigeration.
- (b) Pits, dugouts, or caves.
- (c) Cellars.
- (d) Houses.

XI. Marketing.

FARM AND HOUSEHOLD PHYSICS.

The work in physics should be taught so as to apply not only to the problems of the farmer, but to the mechanic and the housewife as well. The mathematical and more purely scientific side should

receive little emphasis, and stress should be placed on practical applications. For example, little time should be devoted to the study of the laws of falling bodies and the more abstract principles of the physics of light and sound, but the laws of machines and of liquids, as applied to pumps and waterworks and plumbing systems, should be emphasized. The laboratory work should be made as practical as possible rather than scientific.

THIRD YEAR.

(Two weeks, 70 minutes daily.)

I. Mechanics—Solids:

- (a) Levers.
- (b) Wheel and axle.
- (c) Screw.
- (d) Pulley.

II. Work:

- (a) Units.
- (b) Law.

III. Mechanics—Liquids:

- (a) Water supply—
 - 1. Spring.
 - 2. Well.
 - 3. Cistern.
 - 4. River.
 - 5. Lake.
- (b) Pressure in liquids—laws.
- (c) Density.

IV. Mechanics—Gases:

- (a) Weight.
- (b) Pressure—barometer.

V. Air and gas appliances.

- (a) Pumps.
- (b) Vacuum cleaners.
- (c) Fire extinguishers.
- (d) Siphon.

VI. Heat:

- (a) Expansion and contraction—thermometer.
- (b) Draft in fireplace, stove.
- (c) Hot-water heating system.
- (d) Conduction—
 - 1. In liquids.
 - 2. In gases.
 - 3. In solids.

VI. Heat—Continued.

- (e) Ventilation.
- (f) Measurement of heat—caloric.
- (g) Capacity of substances.
- (h) Latent heat—applications—
 - 1. Refrigerator.
 - 2. Artificial ice.
 - 3. Steam-heating system.
 - 4. Distillation.
- (i) Evaporation, dew point, boiling point.
- (j) Sources of heat.
- (k) Heat and work—horsepower—
 - 1. Steam engine.
 - 2. Gas engine.

VII. Electricity:

- (a) What is it?
- (b) How produced—
 - 1. By friction.
 - 2. By chemical action in an electric cell.
 - 3. By means of a dynamo.
- (c) Kinds—positive, negative.
- (d) Electric cell—
 - 1. How made.
 - 2. Polarization.
 - 3. Most convenient kinds.
 - 4. Conductors, insulators.
 - 5. Common uses—electric bells, telephone, flash lights.
- (e) Magnetism and the electromagnet.
 - 1. Magnet.
 - 2. Compass.
 - 3. Electromagnet—
Applications—electric bell, electric telegraph.
- (f) Motor—
 - 1. Its parts.
 - 2. How the electric currents runs it.
 - 3. Uses.
- (g) Electric heating and cooking appliances.
- (h) Electric lights—
 - 1. Incandescent—carbon, tungsten.
 - 2. Arc.
- (i) Common electrical terms and measures—ampere, ohm, volt, watt, watt hour, kilowatt, and kilowatt hour.
- (j) Measuring instruments.

VII. Electricity—Continued.

(k) Dynamo—

1. Induced currents—how produced.
2. Construction.
3. Alternating current.
4. Direct current.
5. How electric current is produced by the dynamo.
6. Sources of electrical energy.

(l) Transformer.

(m) Induction coil.

(n) Telephone.

VIII. Wireless telegraph, X rays, radium.

IX. Light:

(a) Nature of.

(b) Intensity of.

(c) How produced.

(d) How it travels.

(e) Reflection.

(f) Refraction.

(g) Lenses—

1. Convex.
2. Concave.
3. Images.
4. Nearsightedness, farsightedness.

(h) Optical instruments—

1. Camera.
2. Projecting lantern.
3. Spectacles.
4. Magnifying glass.
5. Telescope.

(i) Color—

1. Spectrum.
2. Dispersion.
3. Why objects are colored.
4. Transparent substances.
5. Translucent substances.
6. Opaque substances.
7. Complementary colors.

X. Sound:

(a) How produced.

(b) Velocity.

(c) How it travels.

(d) Waves and wave lengths.

(e) Noises and musical notes.

X. Sound—Continued.

- (f) Pitch.
- (g) Loudness.
- (h) Echo.
- (i) Musical scale.
- (j) Stringed instruments—
 - 1. Laws of vibrating strings.
 - 2. Sound board.
 - 3. Quality.
- (k) Wind instruments—
 - 1. How sound is started.
 - 2. Pitch.
- (l) Resonance.
- (m) Interference.
- (n) Harmony and discord.
- (o) Phonograph.

XI. Gravitation—Center of gravity.

XII. Composition of forces:

- (a) Equilibrium.
- (b) Motion, velocity.
- (c) Forces acting at an angle to each other.
- (d) Parallel forces.
- (e) Falling bodies, acceleration.
- (f) Laws of motion.
- (g) Pendulum.

AGRICULTURAL CHEMISTRY.

The materials dealt with in elementary chemistry are about the student on every hand. The educational value of studying about them is undeniably great if properly undertaken. Work in the classroom and the laboratory must go hand in hand. Each pupil must perform the various experiments illustrative of the facts given in the text and each will help the other.

THIRD YEAR.

(Twenty weeks, 70 minutes daily.)

I. Composition of matter:

- (a) Molecules.
- (b) Atoms.
- (c) Elements.
- (d) Compounds.
- (e) Mixtures.
- (f) Chemical analysis.

II. Properties of matter:

(a) Physical—

1. Form.
2. Weight.
3. Color.
4. Odor and taste.
5. Electrical properties.

(b) Chemical—

1. Atomic weight.
2. Molecular weight.
3. Valence.
4. Combination of elements.
5. Symbols.
6. Formulas.

III. Laboratory practice:

(a) Importance.

(b) Apparatus—

1. Names.
2. Care.

IV. Elements and compounds:

(a) Oxygen—

1. Where found in nature.
2. Preparation.
3. Properties.
4. Importance and uses.

(b) Hydrogen—

1. Where found in nature.
2. Preparation.
3. Properties.
4. Importance and uses.

(c) Nitrogen—

1. Where found in nature.
2. Preparation.
3. Properties.
Contrast with oxygen and hydrogen.
4. Importance and uses.

(d) Carbon—

1. Where found in nature.
2. Preparation.
3. Properties.
Three forms in which found.
4. Importance and uses.
Coal.
Graphite.
Diamond.

IV. Elements and compounds—Continued.

(d) Carbon—Continued.

5. Combustion.
6. Carbon compounds.
Organic chemistry.

(e) Water—

1. Composition and formula.
2. Separation into components.
3. Physical properties.
4. Water of crystallization.
5. Natural waters.
6. Hard and soft water.
7. Impurities in water.
8. How to obtain pure water.
9. Location of wells.
10. How to improve water for drinking and for other uses.
11. Importance.

(f) Air—

1. A mechanical mixture.
2. Carbon dioxid held in the air—
How produced.
Its use by plants.
Its effect if breathed.
Ventilation.
3. Ammonium compounds.
4. Moisture.
5. Liquid air.
6. Organic impurities.
7. Importance—
As source of food.
In combustion.

V. Acids and salts:

(a) What are they?

(b) How formed?

(c) Tests for each.

(d) Hydrochloric acid, chlorin, and chlorids—

1. Where found in nature.
2. Preparation of hydrochloric acid.
3. Properties.
4. Preparation of chlorin.
5. Properties.
6. Chlorids.

Common ones.

Effect of presence on soil.

V. Acids and salts—Continued.

(e) Nitrogen compounds—

1. Nitric acid—

Occurrence.

Preparation.

Properties.

Uses.

2. Ammonia—

Where found in nature.

Preparation.

Properties.

Uses.

3. Importance of nitrogen compounds in agriculture.

(f) Phosphorus and compounds—

1. Where found.

2. How obtained.

3. Uses.

4. Importance of phosphates to the farmer.

(g) Sulphur and compounds—

1. Where found.

2. Properties.

3. Sulphuric acid—

Preparation.

Properties and uses.

4. Sulphates.

(h) Carbon compounds—

1. Marsh gas.

2. Hydrocarbons.

3. Petroleum and its products.

4. Turpentine.

5. Fuels—

Gas.

Liquid.

Solid.

6. Carbon dioxid—

Where found.

Preparation.

Alcoholic fermentation; bread making.

Baking powders, kinds and methods of making.

Carbonates, soluble and insoluble.

7. Foods.

8. Production in plants.

9. Decay.

V. Acids and salts—Continued.

(i) Potassium and its compounds—

1. Where found.
2. Potassium nitrate—salt-peter.

(j) Sodium and its compounds—

1. Where found.
2. Salts—
 - Sodium nitrate—Chile salt-peter.
 - Sodium carbonate—soda.
 - Soap making.
 - Sodium chlorid—salt.

(k) Calcium and its compounds—

1. Carbonate—
 - Limestone.
 - Marble.
2. Oxid. Lime. Mortar.
3. Sulphate-gypsum—
 - Plasters.
 - Plaster of Paris.
4. Phosphate. Fertilizer.
5. Bleaching powder.
6. Glass.

TYPES AND BREEDS OF FARM ANIMALS.

Indian boys are by nature interested in animal life. Between them and their domestic animals we frequently find an affectionate, sympathetic relationship. They usually show a keen and kindly interest in everything relating to the various kinds of farm animals, more particularly the horse, and range cattle. By taking advantage of this inherent characteristic it should not be difficult to make this one of the most interesting subjects in the agricultural course.

A considerable portion of the year's work should be given to a study of the elementary principles of breeding. Students should understand the meaning of pedigree and registration, crossing and grading, and should get the principles underlying breeding for the production of better stock. As often as possible students should be given an opportunity to see and to judge representatives of the breeds they are studying.

THIRD YEAR.

(Forty weeks, $1\frac{1}{2}$ hours per week.)

I. Importance of live stock:

- (a) As food.
- (b) For clothing.
- (c) For labor.
- (d) In maintaining soil fertility.

II. Horses:

(a) Origin.

(b) Breeds—

1. Development of breeds.

2. American saddle—

History.

Size.

Appearance.

Use and value.

(Use above outline in study of all breeds of horses considered.)

3. Percheron.

4. Clydesdale.

5. Shire.

6. Belgian.

7. Mule.

III. Cattle:

(a) History.

(b) Breeds—

1. Development.

2. Shorthorn—

History.

Size.

Appearance.

Uses and value.

(Use above outline in the study of all breeds considered.)

3. Hereford.

4. Angus.

5. Galloway.

6. Holstein.

7. Guernsey.

8. Jersey.

9. Ayrshire.

IV. Sheep:

(a) History.

(b) Breeds—

1. Development.

2. Merino—

History.

Size.

Appearance.

Character of wool.

Use and value.

(Use above outline in study of other breeds considered.)

IV. Sheep—Continued.

(b) Breeds—Continued.

3. Rambouillet.
4. Southdown.
5. Shropshire.
6. Hampshire Down.
7. Cotswold.

V. Goats:

- (a) History.
- (b) Breeds; Angora, Milch.
- (c) Value and use.

VI. Swine.

- (a) History.
- (b) Breeds—

1. Development.
2. Duroc—
History.
Size.
Appearance.
Use and value.

(Use above outline in considering the different breeds.)

3. Berkshire.
4. Poland China.
5. Chester White.
6. Tamworth.

VII. Poultry:

(a) Chickens—

1. Breeds—characteristics and value of each.
Plymouth Rock.
Wyandotte.
Rhode Island Red.
Orpington.
Brahma.
Leghorn.
Cochin.
Game.
2. Eggs:
Parts.
Fertility.
Hatching.
Preservation.
3. Uses and value.

- (b) Turkeys, ducks. (Use outline for study of chickens modified to suit.)

VIII. Stock judging:

- (a) Horses.
- (b) Cattle.
- (c) Sheep.
- (d) Swine.
- (e) Poultry.

(Obtain score card such as is used at State agricultural colleges.)

IX. Breeding:

- (a) Heredity—
 - 1. Meaning.
 - 2. Influence.
 - 3. Importance in breeding.
 - 4. Prepotence.

- (b) Selection—
 - 1. Natural.
 - 2. Artificial—

Importance of care and ideals in selection.

A means of securing desirable characteristics.

Consideration of pedigree.

X. Diseases of animals: Prevention, treatment.

XI. Suggestions to young stockmen:

- (a) Breed for a special purpose.
- (b) Have an ideal and adhere to it.
- (c) Keep a few good animals.
- (d) Try to become a judge of stock.
- (e) Give good animals good care.
- (f) Avoid fads.
- (g) Breed to suit environment.
- (h) Keep a herd record.

FEEDS AND FEEDING.

This is a general course dealing with animal nutrition, feeds and their nutritive value, relation of grade of feed to feeding value, food demands for different kinds of stock for maintenance, growth, work, and production; balancing rations for special purposes, etc. On account of the opportunity to apply it in practice, special attention should be given to the proper use of feeds available. Practical work should be the feeding and care of the horses, hogs, and cows on the school farm.

FOURTH YEAR.

(40 weeks, 1½ hours per week.)

I. Problems involved in feeding animals:

- (a) Evolution from pastoral to present day.
- (b) Methods of providing foods.

II. The elements required and their sources.

III. Digestion:

- (a) Organs.
- (b) Juices.
- (c) Process.
- (d) Conditions influencing—
 - 1. Palatableness.
 - 2. Quantity of ration.
 - 3. Effect of dry fodders.
 - 4. Influence of the stage of growth of the plant.
 - 5. Method of preparation.
 - 6. Effect of salt.
 - 7. Frequency of feeding and watering.
 - 8. Combination of food nutrients.
 - 9. Species, breed, age, and individuality of animal.

IV. Classes and uses of nutrients:

- (a) Mineral.
- (b) Protein.
- (c) Carbohydrates.
- (d) Fats and oils.

V. Practice of feeding:

- (a) Foodstuffs—Natural products—
 - 1. Forage crops—
 - Comparison of green and dry forage crops.
 - Time of harvesting as affecting food value.
 - 2. Silage—
 - Changes in the silo.
 - Extent of loss in the silo.
 - Ensilage versus field curing.
 - Crops for ensilage.
 - Construction of the silo.
 - Filling the silo.
 - 3. Straws.
 - 4. Roots and tubers.
 - 5. Grains and seeds.
- (b) Commercial food stuffs—By-products:
 - 1. Wheat offals—bran, middlings—
 - Composition.
 - Food value.
 - 2. Cottonseed meal.
 - How obtained.
 - Composition.
 - Extent of use and food value.

V. Practice of feeding—Continued.

(b) Commercial foodstuffs, etc.—Continued.

3. Flaxseed meal.

How obtained.

Composition.

Use as stock food.

4. Food of animal origin.

Milk and dairy by-products, composition and food value.

Slaughterhouse and other animals' refuse—tankage.

(c) Selection and compounding of rations.

1. For maintenance only.

2. For milk production.

3. For growth.

4. For flesh production.

5. For work.

6. For egg production.

(d) Importance of water and salt.

(e) Cost of feed in relation to production.

VI. General management:

(a) Selection of animals.

(b) Manipulation of ration and manner of feeding.

(c) Intensity of ration.

(d) Environment and treatment of animal.

(e) Housing—

1. Types of barns—

For dairy cattle.

For beef cattle.

For horses.

2. Hog houses and pens.

3. Sheep shelters.

4. Poultry houses.

FIELD CROPS.

The work in this course should include the study of all the principal cereal and grain-sorghum crops and of the various important forage crops. Special attention should be given to a study of peculiarities of growth, soil relations, planting, tillage, harvesting, and marketing. Through the use of farm bulletins each student should be required to report on special methods for the State or region in which his land is located. He should learn the value of the different crops in his locality and the types or varieties most suitable for planting there. As largely as possible these reports should be in written form and should be preserved by the student for reference when he

returns to his farm. Emphasis should be placed on the fundamental operations—e. g., time of planting as related to soil and moisture conditions and to climate; preparation of soil; depth, frequency, and time of intertillage; management of soil after crop is removed, etc.

Careful attention should also be given to the place of forage crops in the economy of farm management—i. e., systems of rotation, soil fertility, prevention of erosion, and live-stock production. The leading forage crops grown in the various sections of the United States should receive chief emphasis.

The important practical operations should be emphasized, rather than the scientific side, the chief aim being to make this work of practical value to the Indian farmer.

FOURTH YEAR.

(Twenty weeks, 45 minutes daily.)

I. Classification.

- (a) Grain.
- (b) Forage.
- (c) Fiber.
- (d) Tuber.
- (e) Root.
- (f) Sugar.

II. Grains:

(a) Corn—

1. History and classification.
2. Varieties.
3. Importance—
 - Acreage, yield, and value in United States.
 - Uses.
4. Soil and fertilization.
5. Preparation of soil.
6. Preparation and testing of seed.
7. Methods of planting; amount to plant per acre, and time to plant.
8. Cultivation—
 - Object.
 - Implements used.
 - Time to cultivate.
9. Harvesting.
 - Husking.
 - Hogging.
 - Cutting and shredding.
 - Making into ensilage.
 - (Relative economy.)

II. Grains—Continued.

(a) Corn—Continued.

10. Storing.
11. Marketing—
 - Grades.
 - Hauling to market.
 - Sending to market on four legs.
12. Place and value in crop rotation.
13. Diseases. Smut.
14. Injurious insects—
 - Wireworm.
 - Cutworm.
 - White grub.
 - Billbug.
 - Root louse.
 - Chinch bug.
 - Army worm.
 - Rootworm.
 - Grasshopper.
 - Ear worm.
 - Weevil.
15. Selecting and storing seed—
 - Importance of good seed.
 - Time and amount to select.
 - How to select.
16. Improvement.
17. Judging.
18. Cost of production and value, per acre.

(b) Wheat—

1. History and classification.
2. Varieties—
 - Winter, hard—
 - Turkey red.
 - Kharkov.
 - Winter, soft. Fultz.
 - Spring.
 - Fife.
 - Blue stem.
 - Durum.
3. Importance.
 - Acreage, yield and value in United States.
 - Uses.
4. Soil and fertilization.

II. Grains—Continued.

(b) Wheat—Continued.

5. Preparation of soil.
6. Preparation and testing of seed.
7. Methods of sowing; amount to sow per acre, and time to sow.
8. Harvesting and thrashing; different methods and comparative value.
9. Marketing and grading.
10. Storing.
11. Place and value in crop rotation.
12. Diseases.
 - Rust.
 - Smut.
13. Insect enemies.
 - Hessian fly.
 - Chinch bug.
 - Army worm.
 - Weevil.
14. Selecting seed.
15. Judging.
16. Cost of production and value per acre.

Use above outlines for corn and wheat in study of all grains considered; but modify and abridge to suit the crop studied and to fit the importance of the crop in the locality. Give detailed consideration only to those grains that will be grown by the members of the class.

- (c) Oats.
- (d) Barley.
- (e) Rye.
- (f) Flax.
- (g) Rice.
- (h) Kaffirs.

III. Forage crops:

- (a) Meaning and importance.
- (b) Classes—
 1. Grasses—timothy, blue grass, millets, sorghums, orchard grass, native grasses, etc.
 2. Legumes—alfalfa, clovers, cowpeas, beans, etc.
- (c) Importance and uses.
- (d) Place in rotation.
- (e) Comparative feeding value.
- (f) Making a meadow.

III. Forage crops—Continued.

(g) Hay making—

1. Hay-making machinery—kinds, care, and cost.
2. Time to cut.
3. Curing.
4. Baling.
5. Storing—in stack, mow, etc.

(h) Pastures—

1. Importance and use.
2. Plants used for pasture—bluegrass, timothy clover, alfalfa, Bermuda grass, native grasses, red top, etc.
3. Division of fields and fencing.
4. How to maintain a good pasture.

(i) Alfalfa—

1. Kind of soil suitable.
2. Preparation of soil—plowing, inoculation, etc.
3. Selection of seed—
Climate in which grown.
Method of culture.
Get seeds free from weeds.
4. Sowing—
Time.
Broadcasting.
Drilling.
Covering.
5. Treatment of new and old meadows.
6. Harvesting for seed and thrashing.
7. Value for hay and for pasture.
8. Place in rotation.
9. Diseases and pests.

(j) Study other forage crops commonly grown in the localities from which students are enrolled. Outline each crop taught, using the one for alfalfa as a suggestion.

IV. Root and tuber crops.

(a) Distinguish roots and tubers.

(b) Beet.

1. Importance and uses.
2. Classes—
Chard.
Garden beet.
Sugar beet.
Mangel.
3. Soil and preparation.
4. Seeding.

IV. Root and tuber crops—Continued.

(b) Beet—Continued.

5. Cultivation.

6. Harvesting and storing.

(c) Other root crops—Study those commonly grown in localities from which students are enrolled. Outline each crop taught, using the one for the beet as a suggestion.

(d) Potato—

1. Importance and use.

2. Varieties.

3. Soil and location—

Selection.

Preparation.

4. Selection of seed.

5. Cutting and planting.

6. Cultivation.

7. Harvesting and sorting.

8. Storing.

9. Marketing.

10. Yield and cost of production.

11. Insects—

Colorado potato beetle.

Cutworm.

Grubs.

12. Diseases—

Blight.

Internal brown rot.

Scab.

V. Fiber crops:

(a) Classes—

1. Animal—Wool, silk.

2. Vegetable—Cotton, flax, etc.

(b) Cotton—

1. Importance and use.

2. Varieties—long and short staple.

3. Soils adapted.

4. Climate required.

5. Preparation of seed bed.

6. Planting.

7. Cultivation.

8. Picking.

9. Ginning.

10. Baling.

11. Marketing.

V. Fiber crops—Continued.

(b) Cotton—Continued.

12. By-products.

13. Insect pests—

Boll weevil.

Boll worm.

14. Diseases—

Root rot.

Wilt.

VI. Weeds and their eradication.

INSECTS AND INSECTICIDES.

FOURTH YEAR.

(Twenty weeks, 40 minutes daily.)

The study of farm insects should include only those insects most common and most injurious to farm, orchard, and garden crops. The course is not very extensive; therefore a thorough study can be made of only a few of the more destructive insects, and from these generalizations should be made. The life history and habits of each insect should be studied and methods learned of controlling or combating it. Special emphasis should be placed on crop rotation, soil management, and time of planting as methods of control. This work should not be made too technical; just enough of life history should be taught to make sure that the student can intelligently apply methods of combating and controlling the insects.

For practical application, this work should be correlated with the farm, orchard, and garden work.

I. Insects affecting the larger fruits; description and remedy:

(a) Apple—

1. Injuring the trunk—

Round-headed borer.

Flat-headed borer.

2. Injuring the branches—

Oyster-shell bark louse.

Woolly aphis.

Buffalo tree hopper.

3. Injuring the leaves—

Apple aphis.

Canker worm.

Tent caterpillar.

Leaf roller.

Leaf crumpler.

Yellow-necked caterpillar.

Leaf skeletonizer.

I. Insects affecting the larger fruits, etc.—Continued.

(a) Apple—Continued.

4. Injuring the fruit—
Codling moth.
Apple maggot.

(b) Plum—

1. Injuring the trunk. Borer.
2. Injuring the leaves—
Aphis.
Leaf caterpillars.
3. Injuring the fruit—
Curculio.
Gouger.

(c) Pear—

1. Injuring the trunk. Borer.
2. Injuring the branches. Scurfy bark louse.
3. Injuring the leaves—
Codling moth.
Plum curculio.
Slug.

(d) Cherry—

1. Injuring the trunk. Flat-headed borer.
2. Injuring the leaves—
Aphis.
May beetle.
Leafroller.
Slug.
3. Injuring the fruit—
Curculio.
Caterpillars.

(e) Peach—

1. Injuring the root—
Borer.
Black aphis.
2. Injuring the trunk.
Flat-headed borer.
Peach-tree bark louse.
New York weevil.
Caterpillars.
3. Injuring the leaves. Aphis.
4. Injuring the fruit. Curculio.

II. Insects affecting small fruits—description and remedies.

(a) Strawberry—

1. Injuring the root.

Root worm.

Crown miner.

Crown borer.

2. Injuring the leaves.

Leaf roller.

Slug.

3. Injuring the fruit. Tarnished plant bug.

(b) Currants and gooseberries—

1. Injuring the stem. Imported currant borer.

2. Injuring the leaves—

Imported currant worm.

Leaf hopper.

Aphis.

3. Injuring the fruit. Gooseberry fruit worm.

(c) Raspberry and Blackberry—

1. Injuring the root. Root borer.

2. Injuring the leaves—

Slug.

Caterpillars and beetles.

3. Injuring the canes—

Snowy tree cricket.

Cane borer.

(d) Grape—

1. Injuring the root—

Root borer.

Phylloxera.

2. Injuring the leaf—

Flea beetle.

Phylloxera.

Rose chafer

Spotted grapevine beetle.

Sphinx moth.

Leaf roller.

3. Injuring the fruit. Grape-berry moth.

III. Insects affecting shade trees, ornamental trees, and flowers—
description and remedy:

(a) Shade trees—

1. Injuring the branches. Aphides.

2. Injuring the leaves—

White-marked tussock moth.

Fall web worm.

III. Insects affecting shade trees, etc.—Continued.

(a) Shade trees—Continued.

2. Injuring the leaves—Continued.

Imported elm-leaf beetle.

Bagworm.

Green-striped maple worm.

Walnut caterpillar.

Wooly maple-bark louse.

Box-elder bug.

(b) The rose—

1. Injuring the leaves—

Rose slug.

Rose-leaf hopper.

IV. Insects affecting vegetables—description and remedy:

(a) The tomato. 1. Injuring the leaves. Tomato worm.

(b) The potato—

1. Injuring the stem. Potato-stock weevil.

2. Injuring the leaves—

Colorado potato beetle.

Striped-blister beetle.

Imbricated snout beetle.

(c) Squash, melon, and cucumber—

1. Injuring the root. Squash-vine borer.

2. Injuring the leaves—

Cucumber flea beetle.

Squash bug.

Striped-cucumber beetle.

(d) Rhubarb—

1. Injuring the stem. Rhubarb curculio.

(e) Bean and pea—

1. Injuring the seed—

Bean weevil.

Pea weevil.

(f) Cabbage—

1. Injuring the root. Cabbage maggot.

2. Injuring the leaves—

Imported cabbage worm.

Cabbage plusia.

Zebra caterpillar.

Wavy striped-flea beetle.

Cabbage cutworm.

Cabbage aphid.

Harlequin cabbage bug.

(g) Onion. 1. Injuring the bulbs. Onion maggot.

V. Insects affecting cereal and forage crops—description and remedy.

(a) Corn—

1. Injuring the root—
 Corn-root aphid.
 Western corn-root worm.
 Southern corn-root worm.
 Wire worms.
2. Injuring stalk and leaves—
 Stalk borer.
 Cutworm.
 Garden web worm.
 Corn aphid.
 Chinch bug.
 Grasshopper.
3. Injuring the ears. Boll worm.

(b) Wheat—

1. Injuring the stalk and leaf.—
 Hessian fly.
 Chinch bug.
 Grain aphid.
 Wheat-bulb worm.
 Wheat-joint worm.
 Army worm.
2. Injuring the head. Wheat midge.
3. Injuring stored grain. Weevil.

VI. Insect pests of domestic animals and the household; description and remedy:

(a) Domestic animals—

1. Screw worm.
2. Ox warble fly.
3. Cattle lice.
4. Horn fly.
5. Horse lice.
6. Horse fly.
7. Bot.

(b) Household—

1. Cockroach.
2. Buffalo carpet beetle.
3. Bed bug.
4. Clothes moths.
5. Ant.
6. House fly.
7. Mosquito.
8. Flea.

PLANT DISEASES.

FOURTH YEAR.

(Twenty weeks, 45 minutes daily.)

The aim of this course is to enable students to recognize and treat the more common plant diseases without the necessity of a long study as to their causes. A rather careful study should be made of the most destructive plant diseases caused by bacteria or fungi. Information should be given regarding the best methods of prevention or cure of these diseases, and practical application should be made on the school farm, garden, and orchard.

I. Damage caused by plant diseases.

II. Symptoms of diseases:

- (a) Rot.
- (b) Blight.
- (c) Wilt.
- (d) Scab.
- (e) Mildew.
- (f) Burn.
- (g) Smut.
- (h) Rust.
- (i) Yellowing, whitening.

III. Prevention of diseases:

- (a) Disinfecting seeds.
- (b) Killing fungi by applications upon the plant.
- (c) Cutting out infected part.
- (d) Removal and destruction of diseased leaves, twigs, or fruit.
- (e) Removal of plants upon which diseases develop.
- (f) Prevention of wound infection.
- (g) Selection of resistant varieties.
- (h) Avoidance of diseased localities.
- (i) Practice of crop rotation.

IV. Fungicides:

- (a) Bordeaux mixtures.
- (b) Soda or potash Bordeaux mixture.
- (c) Copper sulphate solution.
- (d) Potassium sulphide solution.
- (e) Formalin.
- (f) Corrosive sublimate.
- (g) Flowers of sulphur.
- (h) Lime-sulphur mixtures.

V. Spraying:

- (a) Machinery.
- (b) Cost.
- (c) Profits.

VI. Diseases of special crops—Description and treatment:

(a) Apple—

1. Bitter rot; black rot.
2. Scab.
3. Blotch.
4. Scurf.
5. Rust.
6. Blight.
7. Pacific coast cankers.
8. Black-spot canker.
9. Soft rot, bin rot, or blue mold.

(b) Pear—

1. Fire blight.
2. Rust.
3. Bitter rot.
4. Scab.

(c) Cherry—

1. Leaf spot.
2. Black knot.
3. Brown rot.
4. Leaf curl.
5. Wood rot.

(d) Peach—

1. Brown rot.
2. Scab.
3. Leaf curl.
4. Blight.
5. Powdery mildew.
6. Yellows.

(e) Plum—

1. Black rot.
2. Scab.
3. Mildew.
4. Yellows.

(f) Blackberry—

1. Leaf spot.
2. Orange rust.

(g) Currant—

1. Knot.
2. Cane blight.
3. Rust.
4. Mildew.

(h) Grape—

1. Black rot.
2. Mildew.

VI. Diseases of special crops, etc.—Continued.

(h) Grape—Continued.

3. Necrosis.
4. Wood rot.

(i) Raspberry—

1. Anthracnose.
2. Cane blight.
3. Yellows.

(j) Strawberry—

1. Leaf spot.
2. Mildew.

(k) Bean and pea—

1. Pod spot.
2. Blight.
3. Mildew.

(l) Cabbage—

1. Black rot.
2. Club root.
3. Mildew.

(m) Melons, cucumbers, pumpkins—

1. Leaf blight.
2. Mildew.
3. Wilt.

(n) Onion—

1. Smut.
2. Mildew.

(o) Potato—

1. Blight.
2. Scab.
3. Stem rot.
4. Wilt.
5. Rot.

(p) Tomato—

1. Blight.
2. Wilt.
3. Mildew.
4. Black rot. (See potato blight.)
5. Dampening off.

(q) Corn—

1. Smut.
2. Ear rots.
3. Blight.
4. Wilt.
5. Rust.

VI. Diseases of special crops, etc.—Continued.

(r) Wheat—

1. Black stem rust.
2. Orange-leaf rust.
3. Stinking smut.
4. Loose smut.

(s) Oats—

1. Black stem rust.
2. Crown rust.
3. Loose smut.
4. Mildew.

(t) Rye—

1. Ergot.
2. Black stem rust.
3. Orange-leaf rust.
4. Smut.
5. Mildew.

(u) Sorghums—

1. Blight.
2. Kernel smut.
3. Head smut.

(v) Alfalfa—

1. Wilt.
2. Rot.
3. Mildew.
4. Dodder.

(w) Cotton—

1. Texas root rot.
2. Blight.
3. Boll rot.

(x) Trees and timber—

1. Heart rot.
2. Sap-wood rot.
3. Root rot.
4. Mildew.
5. Rust.
6. Leaf curl.

RURAL ECONOMICS.

FOURTH YEAR.

(Twenty weeks, 40 minutes daily.)

A knowledge of the general principles of economics as applied to agriculture should be a part of the equipment of every farmer with respect not only to his duties as a farmer but also as a business man and a citizen. The work includes a study of the relations of farming

to other forms of productive work, of the relation of capital and labor and land as factors of production, of the investment of capital and labor and proper returns, of ownership and of systems of land rentals and tenure, and of systems of agricultural production. Special attention should be given to agricultural organizations, cooperative marketing, and buying. All this should be made as simple and practical as possible.

I. Definition and general statement.

II. Economic ways of getting a living:

(a) Primary industries—

1. Farming and stock raising.
2. Mining.
3. Lumbering.
4. Hunting and fishing.

(b) Secondary industries—

1. Manufacturing.
2. Transportation.
3. Storing.
4. Merchandising.

(c) Personal service—

1. Healing.
2. Teaching.
3. Inspiring.
4. Governing.
5. Amusing, etc.

III. Agriculture, the rural industry:

- (a) The relation of the family and the school to the industry in the country as compared with the city.

IV. Stages in development; modern agriculture:

(a) Hunting and fishing.

(b) Pastoral life.

(c) The communal village.

(d) Communal farming.

(e) Private ownership of land.

(f) The manor.

(g) Commercial agriculture.

(h) Our debt to English agriculture—

1. Jethro Tull.
2. "Turnip" Townsend.
3. English breeds of cattle.

(i) Agriculture in the colonies—

1. Land tenure.
2. Slavery.
3. Indentured servants.
4. Rural life.

IV. Stages in development, etc.—Continued.

(j) Agriculture after independence—

1. Public-land policy.
2. Migration.
3. Influence of slavery.
4. Improvement of live stock.
5. Improvements in machinery.
6. Effect of Civil War.
7. Free-land system.
8. Transportation development.
9. Change from extensive to intensive farming as cheap land disappears.
10. Founding of agricultural colleges and their influence.

V. Factors of production:

(a) Land—

1. Fixed in total amount.
2. Fixed in location.
3. Variable in fertility.

(b) Methods of cultivation—

1. Extensive.
2. Intensive.

(c) Labor.

(d) Capital.

(e) Management.

(f) Education.

VI. The right-sized farm depends upon:

- (a) The crops to be raised.
- (b) Labor supply.
- (c) Consider relative profitableness of farming on large, medium, and small scale.
 1. Hold enough land to insure profitable-sized farm.

VII. Labor:

(a) Reasons for scarcity of farm labor—

1. Employment for but portion of the year.
2. Improbability of laborer accumulating enough to go into business for himself.
3. Unsatisfactory social status caused by the roving, inefficient "occasional" laborer.
4. Lack of comforts for married laborers.
5. Long hours.

(b) Remedies for scarcity—

1. Improved machinery.
2. Employment by year.
3. Provision for married laborers.
4. Regulation of hours.

VII. Labor—Continued.

(b) Remedies for scarcity—Continued.

5. Division of profits above a certain yield.

6. Do not hire done what you can do yourself.

VIII. Management:

(a) Equipment of the farm—

1. Horse power.

Amount regulated by work to be done.

Economic waste of excess.

2. The gas engine in place of the horse.

3. Machinery.

History of improvements.

Importance of proper equipment.

Waste of a surplus.

Care.

List of machinery required on a quarter-section grain-and-stock farm, with cost.

Buildings.

(b) Ownership and tenancy—

1. Advantages and disadvantages of each.

2. Why own the land you till?

3. Why till the land you own?

4. Leasing of Indian lands.

When justifiable and when not.

Effect upon the land.

Effect upon the lessor.

(c) Marketing products.

1. When to sell.

2. Ways of selling.

Markets.

Auctions.

Fairs.

The middleman.

3. Transportation.

4. Disadvantage of the mortgaged crop.

Forced sale.

Restricts freedom of sale.

Profits go to mortgagee in interest.

(d) Buying—

1. How to buy.

2. Cash and credit.

Store credit.

Bank credit and interest.

3. Parcels post and the farmer.

HOME ECONOMICS.

This course should bend all its efforts to training Indian girls to become model housewives in the home communities. The home of the farmer or workman of moderate means is kept in mind, and the management of such a home and of such an income is emphasized throughout. Training for motherhood and for the cultural and artistic part of the home life is also provided, since our Indian girls should be able to make their future homes pleasant and attractive, as well as economically and hygienically efficient; and they should be prepared to give to their children the nurture and training essential to racial progress. This part of their education must be obtained through training in the household arts, social observances and usages, and through the special courses dealing with home management, motherhood, and care of children.

Special effort should be made to preserve all that is best in Indian folk lore and hero stories as a race heritage, which should be handed down by mothers to their children as an inspiration for racial advancement. Native Indian art should also be fostered and adapted to the decoration of the Indians' new type of homes.

Very special attention should be given to fitting Indian girls to take part in the social and community life of their future neighborhoods and to enable them to exercise a helpful and wholesome influence on community activities.

COOKING.

FIRST YEAR.

(Forty weeks.—Instruction, 1 hour per week; application, 3 hours per week.)

The aim of first-year work is to teach accuracy, order, and neatness and to establish working principles for the preparation of food.

I. Equipment:

(a) Kitchen necessities, conveniences.

(b) Personal equipment—

1. Work uniform; cotton dress, cap, towel holder, dishcloth, note and recipe book.
2. Knowledge of measurements.
3. Rules for dish washing.

II. Construction and care of range:

Fuels; kinds, use, and economy.

III. Water, as a solvent; as a medium for cooking, experiments:

- (a) With boiling temperatures.
- (b) With addition of salt.
- (c) Boiling in high altitudes.
- (d) Uses of ice; ice substitutes.
- (e) Beverages—
 - 1. Infusion, decoction, mixture.
 - 2. Method of preparation.
 - Principle involved.
 - Proportion of ingredients.
 - Utensils.
 - Methods.
 - Practice; fruit beverages, tea, coffee, cocoa, chocolate, coffee, substitutes.

IV. Starch:

Source and structure.

Experiments.

- (a) Effect of cold water.
- (b) Effect of moisture and heat.
- (c) Effect of dry heat.
- (d) Color test for starch; for dextrin.
- (e) Test for solubility.
- (f) Digestibility of starch.
 - Practice; cornstarch mold, white sauce, cream soups, dry toast, toast water, cream toast, croutons.

V. Vegetables:

- (a) Experiments to determine—
 - 1. Composition and nutritive value.
 - 2. Principles of cooking—
 - Soften the fiber.
 - Gelatinize the starch.
 - Use crisp tender fiber raw.
 - Conserve nutrients by baking, steaming, and stewing.
 - Boiling a wasteful method.
 - Practice: Cook by appropriate methods a variety of vegetables. Scallop dishes. Make timetable for cooking vegetables.

VI. Meal preparation (through frequent review of processes):

- (a) Assign menu of two or more foods.
- (b) Outside preparation of teacher—
 - 1. Examine recipes.
 - 2. Determine number of servings.
 - 3. Learn proportions.
 - 4. Note methods and utensils to be used.
 - 5. Plan order of preparation for economy of time.
 - 6. Plan to serve all dishes at one time in proper condition.

VI. Meal preparation, etc.—Continued.

(c) Class training—

1. Being prepared, begin work at once.
Work independently.
2. Cook individual portions.
3. Soil few dishes.
4. Keep table and utensils neat.
5. Have serving dishes ready.
6. Taste before serving.
7. Clear the table and serve all foods at once.
8. In case of failure note cause and remedy.

VII. Methods of cooking—

(a) In hot air.

(b) In hot water.

(c) In hot fat.

(d) Fireless cooker—

1. Combination of other methods carried on by conservation of heat.
2. Principle of construction.
3. Use.

Practice: Build cooker, using barrel or box, excelsior, paper, or hay as packing material.

VIII. Cereals:

(a) Flaked.

(b) Granular.

(c) Principle of cooking.

1. Softening fiber by long cooking at low temperature.
2. Opening starch granule by boiling temperature of water.

(d) Preparation.

1. Proportion of ingredients.
2. Utensils.
3. Method.

Practice: Cook types of cereals, rice, tapioca, macaroni, plain, and with seasoning of fat, sugar, eggs, fruit, and cheese. Use fireless cooker over night.

IX. Sugar:

(a) Kinds and source; use in the diet.

(b) Principles of cooking.

1. Sugar cooked with water forms sirup.
2. Boiled with acid is changed to glucose.
3. Heated without moisture is caramelized.

(c) Digestion of sugar.

Practice: Sirup, peanut brittle, fondant.

Sugars, starches, and cellulose make up the carbohydrates.

X. Leavening agents:

Air, steam, gas.

- (a) Experiments to determine action under varying conditions.
- (b) Method of introducing into mixtures.

XI. Batters and doughs:

- (a) Proportion of ingredients.
- (b) Method of preparation.
- (c) Variation of mixture.
- (d) Method of cooking.
- (e) Digestion of hot breads.

Practice: Baking powder and soda biscuits and griddle cakes, muffins, plain puddings, eggless cake, waffles.

XII. Fruits:

- (a) Composition and food value.
- (b) Principles of cooking.
 - 1. Fiber and skin softened.
 - 2. Flavor developed by long cooking at low temperature.
 - 3. Flavor retained by covering.
 - 4. Replace water by soaking dried fruits.

Practice: Apple puree, sauce, kept whole.

Stewed fruits; baked apple, pear, and bananas.

Stewed dried fruits.

SECOND YEAR.

(Forty weeks.—Instruction, 1 hour per week; application, 3 hours per week.)

Aim: Continue work of first year, establish principles for serving, develop responsibility and speed.

I. Continue frequent reviews by preparation of meals in individual portions.

II. Meat:

- (a) Composition, structure, and nutritive value.

Experiments to show—

Effect of heat on albumen.

Effect of soaking in cold water.

- (b) Principles of cooking—

- 1. Retain juices by coagulating surface of albumen.
- 2. Extract juices by soaking in cold water.
- 3. Combine methods in stews.
- 4. Soften connective tissue with water at low temperature.
- 5. Cool rapidly to keep.

- (c) Study of beef charts.

- (d) Observation: Cutting a side of beef.

- (e) Use of different cuts.

- (f) Price of different cuts.

II. Meat—Continued.

- (g) Cooking tough fiber meat.
- (h) Compare mutton with beef.
- (i) Compare pork with beef.

Study of cuts of beef and pork.

- (j) Time table for cooking meats.

Practice: Roasts, steaks, sausage, stews, braizes, boiling and broths, putting emphasis on cheaper, tougher cuts; sauce accompaniments for meats.

III. Fish:

- (a) Compare with meat.
- (b) Composition, structure, and nutritive value.
- (c) Classes: White meat; oily.

Principles of cooking—

1. Suit method to class.
2. Fish sauces.

Practice: Cook types of each class; canned salmon; leftovers in soup, salad, or casserole.

IV. Shellfish:

- (a) Food value.
- (b) Season for use.
- (c) Care in use.

Practice: Oysters—stewed, saute, fried, scalloped, with macaroni; clam chowder.

V. Gelatin:

- (a) Experiments—
 1. Effect of cold water.
 2. Effect of hot water.
- (b) Use in the body.
- (c) Method of preparation.

Practice: Fruit and vegetable jellies for desserts and salads.

VI. Poultry:

- (a) Selection, preparation, and care.
- (b) Dressing.
- (c) Compare with methods of cooking beef.
- (d) Canned meats and poultry.
- (e) Cost and real value.

Practice: Roast with dressing, fry, fricassee with dumplings or biscuits, braised, chicken soup.

VII. Milk:

- (a) Production, composition, and care, adulteration, pasteurization, and sterilization.
- (b) Digestion.

VII. Milk—Continued.

(c) Uses for sour milk.

Practice: Boiled and baked custard, plain and flavored junket, cottage cheese, cheese souffle, macaroni and cheese, cheese crackers.

VIII. Eggs:

(a) Structure, composition, and nutritive value.

(b) Compare with milk.

(c) Experiments to determine cooking temperatures.

(d) Uses in cookery.

(e) Preservation: Tests for freshness.

(f) Digestion.

Practice: Hard cooked, soft cooked, poached, scrambled, omelet, egg sauce.

IX. Meat substitutes:

(a) Eggs, milk, cheese, nuts, and legumes.

(b) Composition, structure, and food value.

(c) Digestibility.

Practice: Bean soup, baked beans, nut loaf, nut sandwiches, bean sandwiches, cream of pea soup.

X. Proteins:

Meat, fish, poultry, gelatine, eggs, milk, and legumes are classed as protein foods.

XI. Fats:

(a) Sources, kinds, digestibility, cost.

(b) Principles of cooking—

1. Fat melts at low temperature.

2. Compare different fats as to melting point.

3. Smokes at 350° F.

4. Burns above 350° F.

5. Is emulsified by mixing with egg.

(c) Use of fat in frying and sautéing.

(d) Use of fat in sauces.

(e) Compare as to cost, flavor, and digestibility: Beef fat, pork bacon, cream, butter, cheese, olive and cotton-seed oil.

Practice: Bacon, fat pork, French fried vegetables, fritters, sauté, potatoes, apples, egg plant, etc.

XII. Table service:

(a) Requisites.

(b) Setting the table.

(c) Serving meals without waitress.

(d) Clearing table and dishwashing.

(e) Care of left overs and cupboards.

Practice: Plan, cook, serve, and clear away simple meals.

THIRD YEAR.

(Forty weeks.—Instruction, 1 hour per week; application, 3 hours per week.)

Aim: To teach principles of home dairying, efficiency of method in cookery and serving, and simple accounts.

I. Classification of foodstuffs:

(a) Elements required by the body.

1. Energy givers.

Carbohydrates.

Fats.

Protein.

2. Body builders.

Protein.

Ash.

3. Body regulators.

Water.

Ash.

4. Foodstuffs furnishing these elements.

II. Food preservation.

(a) Experiments.

1. To show effects of light, air, moisture, and temperature on growth of molds.

2. To show growth of bacteria.

(b) Principles of preserving food.

1. Drying out moisture.

2. Sterilizing and excluding air.

Canning, water-bath, and water-seal outfit.

3. Use of much sugar to sterilize.

Jellies, jams, and preserves.

Test for pectin.

Test for sufficient cooking.

Effect of long cooking.

Addition of acid.

4. Sterilization by use of vinegar and spices.

5. Methods of canning vegetables.

6. Methods of drying vegetables.

Practice: Jellies from fresh and dried fruits and from those lacking in pectin combined with fruits rich in pectin.

Experiment to discover pectin in carrot, citron melon, the inner rind of citrus fruits, clover, etc. Can typical fruits and vegetables. Consider Government canning work.

Compare cost of home-prepared and commercial products.

III. Care of milk and its products:

(a) Keep reasonably free from bacteria by—

1. Perfect cleanliness in milking.

2. Cooling immediately after milking and keeping cool.

III. Care of milk and its products—Continued.

- (a) Keep reasonably free from bacteria by—Continued.
 - 3. Using sterilized vessels.
 - 4. Keeping covered.
- (b) Methods of separating—
 - 1. Use of separator.
 - 2. Care of separator and utensils.
 - 3. Raising cream in shallow pans.
- (c) Temperature and condition of cream for churning.
- (d) Methods of churning.
- (e) Washing, salting, coloring, and shaping butter.
- (f) Care and methods of cooling without ice.
- (g) Cost of milk and its products.
- (h) Value of by-products.

Practice: Set milk, raise, skim cream, and carry butter-making processes through. Use sour milk and buttermilk in baking.

IV. Wheat:

- (a) Production and composition, kinds.
- (b) Flour; kinds, manufacture.
- (c) Composition of good flour.
- (d) Separate gluten and starch.
- (e) Study gluten characteristics.

V. Yeast plant:

- (a) Experiments to show conditions suited to growth.
- (b) Properties of yeast.
- (c) Kinds—compressed, dry, liquid.

VI. Bread making:

- (a) Essentials.
- (b) Proportion of ingredients.
- (c) Temperature.
- (d) Methods of mixing and baking.
- (e) Compare cost of homemade bread and commercial product.
- (f) Score card:

	Per cent.
External appearance-----	20
Shape, 0.05.	
Size, 0.05.	
Crust, 0.10.	
Color, smoothness.	
Internal appearance-----	50
Depth of crust, 0.10.	
Texture, 0.20.	
Crumb, 0.20.	
Flavor-----	30
Total -----	100

Practice: Different forms of raised bread, rolls, sweet breads, and cakes. Judge cookery.

VII. Pastry:

Review fats—

(a) Characteristics of good pastry. Light, flaky, tender. Dependent on—

1. Proportion of ingredients.
2. Temperatures of ingredients.
3. Method of handling.
4. Baking.

Score card for pies:

	Per cent.
Flavor.....	30
Tenderness.....	20
Lightness.....	10
Flakiness.....	10
Appearance, color, and thickness.....	10
Filling, flavor, and consistency.....	20
	<hr/> 100

Practice: Fruit pies, lemon, custard, pumpkin, squash, tomato. Judge according to taste.

VIII. Menu making:

- (a) All foods represented.
- (b) Contrast flavors in different courses.
- (c) Harmonize flavors in same course.
- (d) Use seasonable foods.

Practice: Plan meals with these points in mind. Cook and serve.

IX. Dining room service:

- (a) Table.
- (b) Table linen.
- (c) China, glassware, silver.
- (d) Table accessories.
- (e) Style of serving.
- (f) Method of serving.
- (g) Use of serving table.
- (h) Use of serving tray.
- (i) Crumbing table.
- (j) Use of finger bowl.
- (k) Dining-room courtesy.
- (l) Good table manners.
- (m) The chair.
- (n) The knife, fork, and spoon.
- (o) The use of fingers.
- (p) The use of napkin.
- (q) Quick eating.

Cook and serve dinners, English style.

X. Cake making.

(a) Sponge cake.

1. Compare with popovers.
2. Ingredients.
3. Method of mixing.
4. Baking.
5. Use and cost.

(b) Butter cakes.

1. Compare with muffins.
2. Ingredients.
3. Method of mixing.
4. Baking.

(c) Score card for cake:

	Per cent.
Flavor.....	40
Lightness	20
Grain and texture.....	15
Baking (crust and color).....	15
Appearance.....	10
	<hr/> 100

(d) Cost and use in dietary.

Practice: Sponge, butter cake, cookies, doughnuts, and varieties. Boiled frosting, uncooked-egg frosting, water icing.

XI. Household accounts.

(a) Apportioning the income.

1. Food.
2. Shelter.
3. Clothing.
4. Operating expenses.
5. Savings.

(b) Method of keeping accounts.

(c) Method of payment.

(d) Bank account and check book.

Practice: Personal accounts. Plan budgets for families on stated and variable incomes. Keep account of class purchases.

FOURTH YEAR.

(Forty weeks.—Instruction, 1 hour per week; application, 3 hours per week.)

Aim: Increase of efficiency in planning, cooking, serving, and care of the household and development of power to assume and carry responsibility of household processes.

- I. The score card for this year should consider the results of independent work in assuming responsibility for planning, teaching, and executing work of different grades.

Score card of independent work:

	Per cent.
Initiative	25
Responsibility	25
Execution through orders.....	25
Economy	25
	<hr/> 100

- II. Home sanitation must receive consideration in the everyday work of the classes; order in place; order in work; methods of cleaning; extermination of household insects; precautions against fire.

- III. House planning and furnishing is an important topic to consider in order that the best results may be obtained in convenience, economy of labor, and economy of cost in building.

Consider: Arrangement of windows, doors, cupboards, cellars, water supply, etc.

Finish of woodwork and floors.

Cost, effect, and durability of furnishings.

Selection of minimum equipment.

Selection of better equipment.

Compare good and bad walls and wall covering.

Collect pictures of good and bad in furnishing and decoration and compare.

Study hanging of pictures and curtains.

- IV. Food requirement is dependent on season and occupation, and on the weight, sex, and age of the individual. Study cost of foods in relation to nutritive value, season, waste, and requirements of individuals and households.

- V. Cost and purchase of food:

Personal attention in buying is important.

Consider quantities to purchase.

Compare weights, measures, and packages.

Determine relative cost of homemade and shop products.

Make frequent marketing trips.

- VI. Dietary studies:

Daily protein requirement.

Daily carbohydrate requirement.

Daily fat requirement.

Examine table of standard portions.

Measure out standard portions of common foodstuffs.

Estimate fuel value of different meals.

VI. Dietary studies—Continued.

Measure recipes to determine number of servings.

Plan meals to meet the energy requirements of certain groups and individuals; cook and serve and estimate the cost.

VII. Childrens' diet:

How it differs from that of adults.

Selection of food: Milk, cereals, eggs, fresh vegetables, meat, desserts, water and other beverages.

Importance of proper diet for development.

VIII. Menu making for the lunch box:

Foods.

Sandwiches.

Relishes.

Desserts.

Packing the lunch box—wrap articles in oil paper to prevent dry out and mussiness.

IX. Invalid cookery:

Selection of foods for the sick; easily digested, appetizing, and small in quantity.

Selection of foods for the convalescent.

Preparation of tray.

Practice: Cooking foods and preparing trays for sick and convalescent.

X. Salads and their use:

Suitable materials.

Kinds of dressing.

Combinations of foodstuffs.

Garnishing and serving.

Placing in the menu.

XI. Frozen mixtures.

Principles of freezing.

Proportions of ingredients.

Methods of combining ingredients.

Practice: Making of a variety of creams as used in dinners, banquets, etc.

XII. Independent work, serving in homes.

SEWING.

FIRST YEAR.

(Forty weeks.—Instruction, 1 hour per week; application, 3 hours per week.)

- I. Aim: To teach the principles of plain sewing and lay a foundation for dressmaking. The work of the prevocational course is a prerequisite for intelligent work here.

II. Study the origin, manufacture, use, and cost of fabrics of vegetable fiber: Collect, mount, and compare samples of cotton and linen material as to width, weave, wearing qualities, color, and cost. Test colored samples for stability of color. Experiment in setting different colors.

III. On finishing each garment estimate its cost and compare with the ready-to-wear article as to appearance, durability, and cost.

IV. Study the standard makes of paper patterns. Compare as to seam allowance, fit, and construction guides. Become perfectly familiar with the construction guide before attempting to use the pattern. Consider method of placing on the goods to cut economically.

V. Occasionally duplicate a garment, working independently, to learn the processes. This tends to develop speed and confidence.

VI. Bobbin and filet lace are given as optional studies.

VII. Construction work:

Flounced petticoat trimmed with embroidery: Amount of muslin and embroidery required; sewing embroidery to goods; piecing embroidery; gathering flounce and stitching to the skirt in one process.

Man's nightshirt: Selection of material; underarm seams; applied facing hem; collar.

Small girl's kilt pleated skirt: Amount of material required; allowance of material for pleats; making the pleats; adjusting to the waistband.

Shirtwaist: Select material and design; take measurements and adapt paper pattern to them; become familiar with guide chart for cutting and construction; the yoke, the cuff, the collar, the gathering at the waist.

Lengthening a child's outgrown dress; use of a faced or an applied hem.

Baby's cap; crochet inserts and edge for band; hemstitched ties.

Knit lace for neck and sleeves of baby dress; the foundation stitches for knitting lace.

Baby's dress; machine hemstitched hems; French seams; sew on knit lace.

SECOND YEAR.

(Forty weeks.—Instruction, 1 hour per week; application, 4 hours per week.)

- I. Aim: To teach the use of simple decoration; to gain some knowledge of textiles and develop neatness, accuracy, and speed.
- II. Score card for plain sewing:

	Per cent.
Cutting -----	50
Stitching -----	10
Finishing -----	10
Fit of garment -----	10
Neatness -----	10
Speed -----	10
	<hr/> 100

Use the score card to measure the degree of success in the finished product.

- III. Make some study of laces and lace making and collect samples of laces; mount and compare as to fiber, durability, use, and cost.
- IV. Consider the location of linen manufactories. Collect samples of table linen; mount and compare as to source, quality, beauty, and cost. Consider the best reason to buy table linen. Learn tests for linen fiber.
- V. Bobbin and filet lace may be given as optional subjects.
- VI. Constructive work:

Small boy's cotton waist; pleating the fronts; strengthening waistband for buttons; trimming collar and sleeves.

Small boy's cotton trousers; making the fly; cutting, making, and inserting pockets; facings; buttonhole waistband.

Lingerie waist: Selection of material, design, trimming, and buttons; collar variations; use of trimming; buttonholes on fine material.

Muslin dress with piped bands for trimming: Select contrasting color for piping and button covers; cut bands and piping; fold piping and baste to the bands; baste whole in place on garment and stitch; cover button molds; make new kind of buttonhole; sew on hangers.

Tablecloth, towel, and napkin; hemmed; initial embroidered in each.

Crochet filet lace; the foundation stitches; learn to read the printed directions for patterns; to crochet an even mesh; modify printed designs; make simple original design.

Garment renovation: Removal of stains; methods of cleaning; repairing, pressing, value of the work.

Hand weaving of belts, bags, rugs, etc.; the method, dyes, and dyeing; planning designs; making of fringes.

THIRD YEAR.

(Forty weeks.—Instruction, 1 hour per week; application, 3 hours per week.)

- I. Aim: To teach the principles of dressmaking and design.
- II. Study the characteristics of silk and wool. Collect samples, mount and compare as to weave, color, beauty, durability, and cost. Test for adulteration.
- III. In the study of design teach—
 - How to suit the design to the variations as well as to the standard sizes.
 - How to adapt the lines of the garment to the figure.
 - How to adapt color and material to the figure.
 - How to secure harmony in color.
- IV. Use the score card in judging each garment. Teach the recognition of elements of success or failure.
- V. Score card for dressmaking:

	Per cent.
Design.....	25
Cutting.....	25
Stitching.....	10
Pressing.....	15
Finishing.....	5
FIt of garment.....	10
Neatness.....	5
Speed.....	5
	<hr/> 100

- VI. Bobbin and filet lace may be given as optional studies.
- VII. Shrink wollen goods before cutting; wring heavy muslin out of water, lay the folded dress goods smoothly on it, and roll closely. Leave until moisture is distributed evenly. Remove cover and press on the wrong side with heavy iron, pressing fold in place and drying thoroughly to prevent wrinkling.
- VIII. Infant's layette; one of each of the necessary garments; number of each required.
 - Kind and amount of material for dresses, skirts, night-gowns.
 - Kind and quality of skirt.
 - Kind and quality of material for sacks for cloaks.
 - Amount of diapering.
 - Number of pairs of socks.
 - Best kind of cap.

IX. Drafting patterns:

Study the implements and system until familiar with the principles of use. Draft simple patterns, collars, pockets, plain waists, sleeves, and skirts.

X. Tailored wool waist:

Select material and design. Take measurements and draft waist and sleeve pattern.

Test measurements; lay whole pattern on goods before cutting any part, trace or mark seams and center lines.

Pin and baste seams; try on, and make alterations if needed.

Stitch seams and press open; finish seams by binding; make sleeve and fit armhole; baste carefully, stitch, and bind; make and apply neckband; make tailored buttonhole.

XI. Sampler of stitches for use on tailored waists.**XII. Tailored wool skirt:** Select material and design; take measurements; draft pattern; place on goods; cut and mark construction lines; pin and baste seams; try on for fit; stitch, remove basting, and press; finish placket; baste on belt; bind seams; try on and mark length; turn up hem, baste, and stitch; press again.**XIII. Sampler of additional seam finishings;** notched; welt seam; double-stitched welt; open welt; stitching on side; bound open welt; double-stitched slot; strap; imitation strap; raw edge lapped; cord seam.**XIV. Dress of wool or silk with fitted lining.** New processes are: Finishing linings, boning, sewing on hooks and eyes, arranging outer waist on lining and joining, arranging outer sleeve on lining and joining.**XV. Art needlework, including a centerpiece in original design of filet crochet.****FOURTH YEAR.**

(Forty weeks.—Instruction, 1 hour per week; application, 3 hours per week.)

Aim: Increase of efficiency and development of power to assume and carry responsibility.

I. Bobbin and fillet lace may be given as an optional study.**II. Such studies of millinery processes are given as are adapted to develop an appreciation of good material, color, and form, and the ability to renovate soiled material and reconstruct from it a creditable product, thus promoting economy in personal expenditure.**

III. Shopping trips with prospective buyers of material for personal and household use furnish valuable experience in the purchase of textiles.

IV. The ability of pupils to judge and to take initiative is promoted by their assuming responsibility for planning and executing the work of the different grades in which instruction has been received.

V. Care, renovation, and alteration of suits and garments together with repair of household furnishings, curtains, rugs, bedding, and table linen should be taken up as a matter of economy in expenditure.

VI. Tailored suit:

Skirt; review of drafting or use of paper patterns and wool skirt making.

Coat; drafting coat-pattern; consider nap and lengthwise and crosswise threads in laying on and cutting; single or double width is a factor in economical cutting; use of shrunken, tailor's canvas; use of cambric; shape haircloth to bust form; shrink, bind, and attach to canvas with padding stitch; baste canvas to wrong side of goods; baste seams and try on; fit, stitch, and press, clipping seams; stitch seams for decoration; baste canvas to cloth; baste shaped canvas around neck and armholes; baste canvas lining to the wrong side of the collar; stitch the stand of collar; catch canvas and cloth on collar and lapels with rows of padding stitches; shape collar into position; turn edges of collar over on canvas and catch to it; press; baste collar flat on coat, stretching collar fronts slightly; sew shrunken tape three-fourths inch from edge of lapels and fronts; cut bias collar facing and apply; cut and apply front facing; baste and stitch sleeves, gather top with two rows gathering; baste in, try on, and stitch; shrink out fullness over tailor's cushion. In cutting lining allow one-half inch on each side of back for a plait; allow a little extra at side front; baste plait in place and lining in back; baste in other parts; turn lining up at bottom, showing about one-half inch goods; fell on overhand binding seams; sleeve lining same size as sleeve; seam up lining; baste to inside of sleeve in proper position as to marks; turn under upper edge, baste to coat lining and fell to place; turn under wrist edge, baste, and fell; give final pressing.

VII. Millinery:

Milliner's stitches; hat frames of wire and buckram; covering frames with braid and straw and plain materials.

Bandeaux linings and trimmings.

Making folds, bindings, facings, bows, rosettes, and ribbon flowers.

Renovating silk, velvet, laces, and flowers, and straw and felt hats.

Adapting style and material to children's use.

CHILD STUDY AND TRAINING.

A course in child study and training will be included in the second edition.

NURSING.

The vocational course in nursing covers four years. See introduction to course in nursing in prevocational division.

I. The nurse:

- Qualifications of the nurse.
- Responsibilities of the nurse.
- Duties of the nurse.
- Hospital etiquette.
- Etiquette of private nursing.
- Dress and personal habits of the nurse.
- Equipment of the nurse's bag.
- Keeping records.

II. The sick room:

- Selection and preparation of the sick room.
- Preparation of the bed.
- Changing the bed clothing.
- Bed making for the different cases.
- Appliances for the relief of bed patients.
- Care of the sick room.
- Hygiene of the sick room.
- Use of simple domestic remedies.

III. The patient:

Nursing in medical cases—

1. General observations.
2. Pulse.
3. Temperature of body.
4. Respiration.
5. Observation of symptoms.

Bodily care of the patient—

1. Changing the clothing.
2. Toilet of the patient.
3. Baths.
4. Feeding.
5. Moving the patient.

Relief of functional disturbances—

1. Enema.
2. Rectal feeding.
3. Douches.
4. Catheterization.
5. Washing out the bladder.
6. Washing out the stomach (Lavage).
7. Feeding by the stomach tube (Gavage).
8. Nasal feeding.
9. Test meals.

III. The patient—Continued.

Administration of medicines—

1. Rapidity of absorption of medicines.
2. Action of medicines.
3. Precautions as to—
 - Handling medicines.
 - Administering medicines.
4. Medicines given by the mouth.
5. Medicines given by the rectum.
6. Hypodermic medication.
7. Inunctions.
8. Inhalations.

Local external application—

1. Baths.
2. Symptoms of inflammation.
3. Treatment of inflammation.
4. Bleeding.
5. Fomentations.
6. Poultices.
7. Dry heat.
8. Cold.
9. Counterirritants.
10. Blisters.
11. Massage.
12. Liniments.
13. Lotions.
14. Gargles, sprays, etc.
15. Eye lotions.
16. Syringing the ears.

IV. Nursing in obstetric cases:

Pregnancy—

1. Signs, positive and presumptive.
2. Symptoms.
3. "Quickening" fetal movements.
4. Duration of pregnancy.
5. Conception and estimation of probable date of confinement; possible error.
6. The fetus and its nourishment.
7. Disorders of pregnancy; preparation of breasts.
8. Termination of pregnancy.

Nurse's preparation for labor—

1. The nurse herself.
2. The patient.
3. The room and bed.
4. Accessory preparation; list all materials and procedures necessary and available in the hospital and in the ordinary home.

Labor—

1. "Pains"; true and false.
2. Presentation of child.
3. Stages of normal labor and characterization of each—
 - First stage; condition and indications.
 - Second stage; conditions and indications.
 - Third stage; conditions and indications.

IV. Nursing in obstetric cases—Continued.

Labor—Continued.

4. Duration of labor.
 5. Conduct of normal labor.
 6. Methods of artificial respiration.
 7. Importance of putting child to mother's breast as soon as possible.
 8. The afterbirth; cautions and care.
- Management of the lying-in period—
1. Period of confinement to bed; reasons.
 2. The catheter; needs for; uses.
 3. Lochia and napkins.
 4. Douches: Must not be given except under direct orders from physician.
 5. Diet.
 6. Condition of the bowels.
 7. Temperature and pulse.
 8. After pains.
 9. Lactation; colostrum; care of breasts; milk fever; importance of having the mother nurse her own child. Breast-fed children possess more vitality than bottle-fed babies.

Dangers of the lying-in period—

1. Hemorrhage.
2. Blood poisoning.
3. Insanity.
4. Convulsions.
5. "Milk leg"; clots; thrombus; embolus.
6. Extra-uterine pregnancy.
7. Cæsarean section.

V. The nursing of sick children:

Care of the newborn—

1. Dressing of the cord.
2. Dressing the infant.
3. Bathing the baby.
4. Defecation and urination.
5. Nursing the infant.
6. Artificial feeding.
7. Infant foods and rules for feeding.
8. Sterilization of milk.
9. Infant development.

Care of premature infants.

Diseases of infancy—

- | | |
|-------------------------------|--|
| 1. Thrush. | 10. Teething. |
| 2. Colic. | 11. Worms. |
| 3. Obstruction of the bowels. | 12. Protrusion of the bowel. |
| 4. Gastroenteritis. | 13. Ophthalmia. |
| 5. Vomiting. | 14. Snuffles. |
| 6. Diarrhea. | 15. Infant paralysis. |
| 7. Cholera infantum. | 16. Tongue-tie. |
| 8. Rickets. | 17. Temperature, pulse, and respiration. |
| 9. Convulsions. | 18. Significance of the baby's cry. |

V. The nursing of sick children—Continued.

Diseases of childhood—

- | | |
|--------------------------------|-------------------|
| 1. Typhoid fever. | 5. Mumps. |
| 2. Meningitis. | 6. Measles. |
| 3. Incontinence of urine. | 7. Chickenpox. |
| 4. Chorea or St. Vitus' dance. | 8. Scarlet fever. |
| | 9. Diphtheria. |

Surgical diseases of childhood.

Hip-joint disease, etc.

Management of children.

VI. Nursing in gynecologic cases:

Preparation and positions for gynecologic examinations.

Preparation for operation.

After care of patient.

VII. Duties of the nurse in general surgical cases:

Preparation of the operating room.

Preparation for the operation.

Preparation of the patient.

Duties of the nurse in emergency cases.

Duties of the nurse in the operating room.

Arranging the patient for the operation.

After care of the patient.

Sequels of the operation.

After treatment of patient.

Surgical disinfection and materials.

Surgical dressing, materials, and solutions.

VIII. Nursing in special medical cases:

Infections and contagious diseases—

- | | |
|---|---|
| 1. Typhoid fever. | 24. Appendicitis. |
| 2. Scarlet fever. | 25. Dysentery. |
| 3. Typhus fever. | 26. Cholera morbus. |
| 4. Smallpox. | 27. Acute diarrhoea. |
| 5. Chickenpox. | 28. Cerebrospinal meningitis. |
| 6. Measles. | 29. Cerebral apoplexy. |
| 7. German measles. | 30. Paralysis. |
| 8. Malaria. | 31. Epilepsy. |
| 9. Diphtheria. | 32. Hysteria. |
| 10. Gonorrhea. | 33. Trachoma. |
| 11. Syphilis. | 34. Dropsy. |
| 12. Phthisis or pulmonary tuberculosis. | 35. Rheumatism. |
| 13. Simple croup. | 36. Acne. |
| 14. Membranous croup. | 37. Eczema. |
| 15. Whooping cough. | 38. Scabies or itch. |
| 16. Influenza. | 39. Ringworm. |
| 17. Tonsillitis. | 40. "Shingles." |
| 18. Pneumonia. | 41. "Hives." |
| 19. Bronchitis. | 42. Lupus. |
| 20. Asthma. | 43. Fumigation after contagious diseases. |
| 21. Pleurisy. | 44. Caring for the dead. |
| 22. Gastritis. | |
| 23. Peritonitis. | |

IX. Physiology and descriptive anatomy:

Physiology—

1. Circulation of the blood.
2. Respiration.
3. Digestion.
4. Secretions.
5. Excretions.
6. Urinary organs.

Descriptive anatomy—

1. The skin.
2. The bones.
3. The muscles.
4. Heart, blood, and lymphatics.
5. Brain, spinal cord, nerves.
6. Organs of the senses.
7. Respiratory organs.
8. Digestive organs.
9. Urinary organs.
10. Female organs of generation.

X. General suggestions—

1. Diet in illness and in convalescence.
2. Serving the food.
3. Diet kitchen outfit.
4. Recipes for foods and beverages for invalids—

Simple farinaceous food.	Prepared milk.
Beef, teas, and extracts.	Toasts.
Broths.	Desserts.
Oysters.	Miscellaneous dishes.
Puddings.	Beverages.
Soups.	Mineral waters.

XI. Accidents and ailments:

Surgical accidents, conditions, and care—

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Fractures. 2. Dislocations. 3. Sprains. 4. Surgical dressings. 5. Bandages. 6. Strapping. 7. Splints. 8. Extension. 9. Wounds. 10. Suppuration. | <ol style="list-style-type: none"> 11. Erysipelas. 12. Pyemia (blood poisoning). 13. Tetanus (lockjaw). 14. Gangrene. 15. Abscess. 16. Boil. 17. Carbuncle. 18. Ulcer. 19. Fistula. 20. Sinus. |
|---|--|

XI. Accidents and ailments—Continued.

Common emergencies—

- | | |
|--------------------------------|---|
| 1. Hemorrhages. | 13. Foreign bodies. |
| 2. Burns and scalds. | 14. Bites and stings of insects. |
| 3. Sunstroke. | 15. Dysmenorrhea. |
| 4. Heat exhaustion. | 16. Vomiting. |
| 5. Lightning stroke. | 17. Flatulence. |
| 6. Syncope (fainting). | 18. Intoxication. |
| 7. Drowning. | 19. Toothache. |
| 8. Accidents from fire. | 20. Insomnia. |
| 9. Accidents from electricity. | 21. Burns by drugs and acid substances. |
| 10. Retention of urine. | 22. Frostbite. |
| 11. Accidents to head. | 23. Chilblains. |
| 12. Cuts and bruises. | |

Poisoning, accidental or otherwise.

1. A poison—what it is.
2. Classification of poisons.
3. Action of poisons.
4. Irritant poisons.
5. Narcotic poisons.
6. What to do in cases of poisoning.
7. Bites of rabid or venomous animals.

XII. Weights and measures.

XIII. Medical terminology and abbreviations.

XIV. Dose lists.

XV. Glossary.

TRADE COURSES.

While agriculture and stock raising will probably continue to form the chief occupation of the great majority of the Indians of our country, who are naturally and necessarily a rural people, still, to a limited extent the trades of blacksmithing, carpentry, painting, plumbing, engineering, masonry, etc., afford excellent opportunities for the employment of trained Indian mechanics. The average Indian student comes to us with an inherited skill and interest in the use of tools. In his native state he fashioned his implements of war and husbandry from the raw material, employing for the purpose the rudest tools. By wisely utilizing this native ability it should be turned to good account in developing and training artisans of skill and efficiency.

For years to come the great West will be the scene of varied industrial activity and advancement. Already many Indian reservations have been opened to white settlement; railroads have been constructed through them; towns and cities have been built where only a few years ago the Indian wigwam held solitary possession. The future Indian mechanic should be given such training as will enable him to see and utilize his opportunities. He should be prepared to become a valuable factor in the development of the resources of his undeveloped country to which he will naturally return after leaving school.

No course in mechanic arts in any school, conducted as a school, can turn out finished master craftsmen. The aim of these courses is to give to Indian boys such trade and technical information and training as will enable them to go out from the school, not finished workmen, but well equipped and trained journeymen, who, after getting real trade experience, will become skilled mechanics capable of taking their place beside the average skilled workmen of whatever race.

These courses are to be followed as closely as local conditions and the varying demands of the school's upkeep will admit. Wherever the demands of the school require that certain kinds of work be done in some period of the course other than that specified in the course, students should be given credit for the work done if the principle involved has been thoroughly mastered. In other words, these courses must be made to fit the student and not the student to fit the courses.

A reasonable number of technical terms—trade language—are necessary to enable the boy to read intelligently trade journals and more or less technical works.

CARPENTRY.

FIRST YEAR.

(Forty weeks.—Instruction, 1½ hours per week; application, 20½ hours per week.)

Talks on the different features of the trade.

Names, classification, and cost at current prices of tools and other equipment, with thorough instruction as to their use and care.

Carpenters' benches, hatchets, hammers, axes, adzes, hand saws, planes, chisels, oil stones, grindstones, emery wheels, screw drivers, pliers, hand vises, brad awls, mallets, nail sets, plumb bobs, dividers, calipers, countersinks, files, rasps, monkey wrenches, spoke shaves, braces and bits, augers, carpenters' levels, 2-foot rules, steel squares, try-squares, lumber scale, gauges, breast drills, scrapers, miter boxes.

The teacher should always give such additional information as may be essential to an intelligent and comprehensive understanding of the subject.

Timber:

Classes—

Soft: Pine, spruce, hemlock, cedar, cypress, fir, redwood, etc.

Hard: Oak, maple, poplar, chestnut, walnut, locust, hickory, ash, elm, birch, beech.

Seasoning—

Air seasoning.

Kiln drying.

Wood for special purposes (suggested merely as a guide)—

Framework: Pine, spruce, hemlock, fir, oak, etc.

Exterior trimming: Pine, fir, redwood, cedar, cypress.

Siding: Pine, redwood, cedar, fir, cypress.

Shingles: White pine, redwood, cedar.

Doors, sash, wainscoting: White pine, fir, redwood, cypress, poplar.

Flooring: Maple, white oak, pine, fir, cypress, maple, beech, redwood, cedar, pine, basswood, elm.

Methods of measuring, grading, piling and storing lumber; acquaint pupils with prices of different kinds and grades.

Have pupils study, by actual observation in the building, the different parts and locations of a common framed structure, such as sills, studs, headers, plates, joists, trimmers, ridges, rafters, window frames and sash, door frames and doors, baseboards, molding, wainscoting, chair rails, etc.

Exercises:

Measuring. Exercises in measuring in feet, inches, halves, quarters, eighths, and sixteenths, using the 2-foot rule and carpenter's steel square.

Exercises—Continued.

Planing—

Planing and squaring to a given width and thickness; planing to a square a piece of four equal sides; planing wind out of timber.

Sawing—

Exercises in the use of try-square, T bevel, compass, and marking gauge in laying out work.

Marking with pencil and knife. Exercises in crosscut, rip, back, and compass sawing.

Joinery. Construction of joints, explaining the application of the various joints to work for which they are best suited. Instead of having pupils depend entirely on the making of joints in model form they should, so far as possible, be taught to apply them in the actual making of complete articles, or in building construction. Use the plane, saw, marking gauge, mortise gauge, and chisel.

Halved-together joint—

Applications—sills, plates, purlins, and the splicing of timbers.

Halved-dovetail joint—

Applications—to prevent timbers from sliding or pulling apart.

Through mortise and tenon joint—

Applications—making furniture, doors, sash, and panel work.

Open mortise and tenon joint. Applications, making sash.

Miter joint. Applications, membering moldings, cornices, furniture.

Double mortise and tenon joints. Applications, making doors, panels, wainscoting, etc.

Dowel joint. Applications, small doors and light panel work, glueing and fastening boards together edgewise.

Dovetail joint. Applications, cabinetwork, particularly in making drawers and small chests.

Slip tongue, matching and blind nailing. Applications, flooring and ceiling.

Rabbeting. Applications, making doorframes and joining boards together edgewise.

Dadoing. Application, cabinetmaking, shelving, door and window frames.

Beads. Applications, breaking plain surfaces, as in ceiling.

SECOND YEAR.

(Forty weeks.—Instruction, 1½ hours per week ; application, 20½ hours per week.)

Talks on builder's hardware and other material with which the carpenter must become familiar; names and cost, with instructions as to use.

Nails, bolts, screws, stirrups, escutcheons, rims and mortise locks, dead locks, knob locks, store door latches, thumb latches, padlocks, door pulls, push and pull plates, door springs and checks, fast and loose pin hinges and butts, shutter fasteners, sash lifts, sash fasteners, sash bolts, sash pull plates and hooks, transom lifts and chains, door buttons, cupboard catches and turns, transom latches, screen door catches, drawer pulls, coat and wardrobe hooks, gate and door hooks, hinges and hasps, barrel and square bolts, mortise bolts, flush and surface bolts, chain door fasteners, door holders, stops, shelf brackets and screws, gate latches and hinges, strap hinges, blind fasteners and hinges, sash weights, cord, pulley, and chain; sliding-door rails and sheaves, staples, hooks and hasps, awning hooks, glue, glass, putty, lime, plaster, cement, brick, stone, sand, metal lath, plaster board, roofing (metal, slate, asbestos, and other prepared roofing), building paper, beaver board, sandpaper, rip saw, band saw, mortise machine, lathe, planer, grindstone, emery wheel. Give special attention to adjustments, speed at which machines should be operated, oiling, caring for shafting, hangers, boxing and loose pulleys, belt lacing, use of guards to prevent accidents.

Talks and exercises:

Making window and door frames, doors, and various kinds of moldings.

Paneling, millwork in general, cabinetwork, especially furniture for school use.

Setting stud walls and partitions, door and window frames.

Sheathing.

Hanging doors and transoms.

Fitting hardware.

Construction of shelving, drawer chests.

Placing stools, aprons, and casings.

Laying top floors.

Setting grounds, building in mopboards.

Fitting molding and quarter round.

Putting on building paper.

Putting siding, corner boards, water table.

Building of straight-run stairs; risers and treads, stringers, platforms, newel posts, balusters, handrails.

Continue application of principles taught in general upkeep of plant.

THIRD YEAR.

(Forty weeks.—Instruction, 1½ hours per week ; application, 20½ hours per week.)

Talks on building construction. So far as possible, these talks should be given in connection with the actual doing of the work. If practicable build during this year, for instruction purposes, a small modern cottage; if not practicable, apply the principles in other construction and in repair work.

Laying out and squaring foundations; use of stakes and batter boards, the carpenter's level, straightedge, plumb line, square, tape; methods of excavation, width and depth.

Foundations. Stone, concrete, brick. Forms for concrete foundations.

Balloon framing. Practical use of joinery exercises in framing sills, posts, plates, girders, and ties; fitting in braces; use of nails, bolts, and stirrups; laying and anchoring sills; framing and bridging joists; setting studdings, sheathing, splicing timbers, laying under-floor.

Roof types. Lean-to, pitch or gable, gambrel, mansard, hip, valley, flat.

Roof framing. Cutting rafters for different kinds of roofs. (Use steel square in illustrating roof work.)

Cornices and gutters, valleys, flashings, downspouts, different kinds and construction.

Laying shingles and other kinds of roofing.

Putting on siding, different kinds.

Porches and verandas.

Putting on lath or plaster board.

Framing stairs.

Setting doors and window frames.

Fitting windows.

Interior finish: Quality of work; moldings in use, quarter round, half round, cove ogee, crown, bead.

Laying finished flooring, floor scraping and planing.

Casings.

Carpet strips.

Paneling beams.

Hanging doors.

Setting mantels.

FOURTH YEAR.

(Forty weeks.—Instruction, 1½ hours per week ; application, 22½ hours per week.)

Review work of previous years, placing emphasis on the measurement, grading, cost and care of lumber; problems involved in roof framing (strength of trussed roofs and girders), stair building, and

the use of the steel square; making of plans, specifications, and estimates, including material and labor; strength of joints, holding power of nails, screws, bolts, glue; wind pressure, snow loads, floor loads; effect of heat and moisture on wood and cement; insulation; protective coatings.

Give special attention to the use of catalogues, tradesmen's hand-books, and trade journals.

Exercises: Continue practice in repairs and more difficult building construction and cabinet work. Require students to plan and execute work, acting as advanced foremen.

DRAFTING.

(Two hours per week.)

The aim of this course is to familiarize the student with working drawings; to enable him to read them, to work from them, and, when necessary, to make his own plans. It is not the intention to make finished draftsmen.

CARPENTRY AND BUILDING.

First year.—Use and care of instruments. Free-hand lettering and figuring. Practice in scaling drawings. Drawing of simple lines and figures. Drawing from simple plates of structural elements to scale. Plan and elevation of structural elements to scale. Dimension lines. Placing dimensions and scale designations on drawings. Free-hand sketches and study of proportion. Diagonal scale of equal parts. Sketch of trade problems for beginners; tool box, sawhorse, workbench, etc. Making simple working drawings of same. Inking, tracing, and blue printing. Mechanical lettering.

Second year.—Drawing plans and elevations of simple cottage, studying economy and convenience. Details of window frames and sash, doorframes, and doors. Interior trimming. Conventional methods of designating building materials. Make working drawings of furniture—dining table, chair, kitchen, dresser, etc. Draw plans of barn, chicken house, hog house. Plot tracts of land by subdivision, township, and range, showing streams, roads, bridges, and buildings.

Third year.—Prepare complete plans, specifications, bills of materials, and estimate for a small cottage.

ENGINEERING.

First year.—Use and care of instruments. Free-hand lettering. Practice in scaling drawings. Drawing of simple lines and figures. Drawing from simple plates to scale. Plans and elevations of small objects to scale. Dimension lines. Place dimensions and scale designations on drawings. Free-hand sketches and study of proportion.

Sketches of valves, hangers, couplings, fly wheels, etc. Make simple working drawings of same. Inking, tracing, and blue printing. Mechanical lettering.

Second year.—Make drawings of boilers; exteriors and sections. Boiler settings; plan, elevation, and section. Draw parts of steam and gas engines; cylinder, piston, connecting rod, etc. Interpret plans of bathrooms; details and sections of bathtubs, sinks, urinals, closets, lavatories. Interpret floor plans and cross sections of buildings, showing plumbing, heating and lighting installation, and prepare bills of materials therefrom.

MASONRY.

First year.—Use and care of instruments. Free-hand lettering. Practice in scaling drawings. Drawing of simple lines and figures. Drawing from simple plates to scale. Dimension lines. Placing dimensions and scale designations on drawings. Free-hand sketches of walls, piers, corners, copings. Develop working drawings from sketches. Inking, tracing, and blue printing. Draw simple forms for concrete steps, fence posts. Draw bonds, arches, chimney tops. Plans, elevations and section of fireplaces. Details of window and door frames for masonry walls. Conventional designations of different kinds of masonry and methods of indicating same.

Second year.—Study plans and details of boiler settings, foundations for machinery, and prepare estimates of materials. Interpret plans of a simple four-room cottage, including cellar, to be built of stone, brick, or concrete. Prepare bills of materials.

BLACKSMITHING.

First year.—Use and care of instruments. Free-hand lettering. Practice on scaling drawings. Drawing of simple lines and figures. Drawing from simple plates to scale. Plan and elevation of simple objects to scale. Dimension lines. Placing dimensions and scale designations on drawings. Free-hand sketches and study of proportion. Sketches of tools used in shop, such as anvil, hand hammers, sledges, tongs, swage block, tapered mandrels, cold chisel, forge. Make working drawings of same, inking, tracing, and blue printing. Make plans showing location of equipment.

Second year.—The same as second year of engineer's course, optional.

PAINTING.

First year.—Use and care of instruments. Free-hand lettering. Practice in scaling drawings. Drawing of simple lines and figures. Drawing from simple plates to scale. Plan and elevation of

small objects to scale. Dimension lines. Placing dimensions and scale designations on drawings. Free-hand sketches and study of proportion. Drawing of appliances used in trade on exterior work; ladders, swing, scaffolds. Inking, tracing, and blue printing. Elementary perspective, free-hand. Sketches of objects. Primary work in stencil design. Develop stencil from sketch. Mechanical lettering. Elevation of interior of rooms as practice for work in stencil design. Drawings to illustrate different kinds of signs.

Second year.—Progressive work in free-hand; perspective in sketches of various objects. Enlarging and reducing studies for use as a basis for stencils. Sketching interior trimming and furniture. Plat tracts of land, by subdivision, township, and range, showing streams, roads, bridges, buildings, and topography.

BLACKSMITHING.

FIRST YEAR.

(Forty weeks.—Instruction, 1½ hours per week; application, 20½ hours per week.)

Talks to students on the different features of the trade which they must master to become proficient mechanics.

Cost at current prices of tools, materials, and other equipment, with instructions as to their use.

The forge, fire tools, anvil, hammers, sledges, tongs, hardy, cold and hot cutters, flatter, punches, swages, swage blocks, fullers, heading tools, mandrels, bench and measuring tools, vise, chisels, rules, square, dividers, calipers, scratch awl, tire setters, bolt cutters, wrenches, bevel, hack saw, files, rasps, stocks and dies, drills, pincers, emery wheel, horseshoeing tools, shoes, nails, fuel, fluxes (borax, salamoniac, sand), iron, steel.

In these talks the teacher should always give thorough instruction not only on the points mentioned but on such additional points as may be essential to an intelligent and comprehensive understanding of the subject.

Talks and exercises: Keeping shop in order; making and management of fires. Have the students acquire the correct manner of standing and working at the forge and anvil, using the tongs and hand hammer, in becoming skillful in drawing down, bending, shortening, welding, and splitting, and to learn the proper heats for working iron and steel.

Making staples, S hooks, gate hooks, door hasps, bolts, welding (fagot, round, flat, right angle, T weld, chain making).

Give special instruction in soldering.

Apply these principles to the simple repair work that is brought in the shop.

SECOND YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $20\frac{1}{2}$ hours per week.)

Treatment of tool steel : Selecting and working steel ; uses of different grades of steel ; annealing, hardening and tempering, case-hardening.

Tool making (work from blue prints) : Tongs, nippers, hammers, chisels, punches, drills, hardies, crowbars, etc.

Repairs to farm implements: Sharpening plowshares, cultivator shovels, harrow teeth, disks, mowers ; wagons, buggies, etc., paying special attention to tire setting, replacing broken spokes, fellies, setting skeins, making and repairing wagon boxes, wagon tongues, buggy poles and shafts, neck yokes, eveners.

Ordering new parts for farm implements: Necessity of giving proper description.

Horseshoeing: Management of horses in the shop ; removing old shoes, anatomy of the horse's foot, preparing the hoof for the shoe, fitting and nailing on old shoes.

Making horseshoes: To correct forging, knee knocking, interfering, overreaching, stifle trouble.

Diseases of the horse's foot.

THIRD YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $22\frac{1}{2}$ hours per week.)

Review work of previous years.

Continue practice in doing repair work of all kinds ; horseshoeing.

Estimate cost of material and labor and proper charge for piece-work.

Give special instructions relative to the necessary equipment, including tools and materials and cost thereof for a small shop, the proper arrangement of equipment of shop, storage of materials, care and use of old material ; the use of catalogues, handbooks, and trade journals.

Require students to plan and execute work, acting as advanced foremen.

ENGINEERING, INCLUDING POWER PLANT, PLUMBING, HEATING, AND ELECTRIC WIRING.

FIRST YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $20\frac{1}{2}$ hours per week.)

Talks to students on the different features of the course which they must master to become efficient.

Power plant:

- Talks and exercises: A general examination of the power plant; names, cost, use, and care of tools and equipment.
- Types of steam boilers: Boiler and furnace fittings, valves (safety, globe, gate, check).
- Gauges (steam, water).
- Water column.
- Drums (steam, mud).
- Man and hand hole plates.
- Whistle.
- Injector and inspirator.
- Grates, bridge walls, furnace, doors, damper regulators.
- Boiler setting: Foundation, construction of walls, ash pit, back filling, supporting the boiler, fire-brick linings, doors, and fronts.
- Boiler management: Examination; great importance of keeping the proper amount of water in the boiler at all times.
- Starting the fires; necessity of slow firing of a cold boiler; light and heavy firing, and necessity for each.
- Cutting into service; changing from one boiler to another under pressure.
- Trying safety appliances under steam pressure to be sure that they are in proper working order.
- Preparing fires for cleaning; cleaning fires; rapid cleaning and its importance; maintaining pressure.
- Priming, foaming, causes and remedies; blowing down a boiler at regular intervals and necessity thereof.
- Shutting down for the night; banking the fires; precautions to be taken before leaving the boiler room at night.
- Inspection for corrosion and incrustation of boilers and tubes; cleaning boilers and tubes; boiler compounds and their use.
- Inspection of brickwork in furnace and back connection.
- Importance of keeping grate bars in good condition, and ash pits clean.
- Overheating, causes, effects, remedies; importance of keeping fire sheet clean.
- General repairs on boiler.
- Injectors, care and management.
- Horsepower of boilers and methods of determining.
- Breechings, dampers, and stack connection.
- Mechanical stokers.
- Fuel: Coal, wood, oil, gas.

Power plant—Continued.

Pumps: Different types, high and low service; methods of packing; steam and water valves; steam and electric driven service pumps; location of boiler feed pumps and temperature of water to be pumped; feed-water heaters, open and closed types.

SECOND YEAR.

(Forty weeks.—Instruction, 1½ hours per week; application, 20½ hours per week.)

Steam engine:

Types; construction and working principles; starting and stopping; precautions to be taken in each case.

Lubrication; quantity and quality of lubricant to be used on different bearings.

Bearings and their adjustments.

Valves, how to set slide and Corliss; lap and lead, and its effect on the engine.

Cut-off, its meaning and purpose.

Back pressure, its advantages and disadvantages.

Piston clearance, its necessity and how to determine.

Horsepower, indicated, friction, net; how to figure after assuming M. E. P. (mean effective pressure).

The governor, fly-ball, centrifugal and inertia; their duties and working principles.

Gas engines:

Types; automobile, motorcycle, marine, stationary.

General principles: Difference between the two and four cycle engine.

Compression and its importance.

Carburetor, magneto, spark coil, spark plug, and connection.

Cooling systems, thermostatic, forced circulation and air; necessity for proper cooling.

Valves, push rods, and their adjustments; timing gears and importance of correct timing.

Carbon deposits and its effect on the engine.

Proper lubrication and its problems.

Electric wiring:

Making different kinds of joints and splices.

Removing insulation from wires.

Making, soldering, and taping joints.

Battery connection.

Wiring for door bells, annunciators, alarms.

House wiring, open, concealed, metal conduit work.

Location of switches, cut-outs, etc.

Study underwriters' rules.

THIRD YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $22\frac{1}{2}$ hours per week.)

Plumbing and heating—Talks and exercises:

Names, cost, uses, and care of tools, equipment, and material.

Laying sewer pipe; cementing connections, pitch, size, and capacity; sewer branches; manholes, traps.

Cast-iron soil pipe; where and how used, sizes and weights, cutting; calking joints.

Calking and testing cellar drains and soil stacks.

Back venting; why traps are back vented and how constructed; soil and waste venting. Distinction between soil and waste for drainage.

Pitch and sizes of waste pipe; waste vents.

Preparing soldering irons; soldering-iron practice; making solder; composition; proportions for wiping solder; melting points and result of overheating.

Preparing pipe for wiping; cutting and making wiping cloths; wiping joints of various sizes, shapes, and in various positions. (Wiping joints is optional; may be given if time permits.)

Roughing in and setting fixtures, including connecting of stoves, heaters, boilers, sinks, tubs, lavatories, and closets, using nickel-plated and wrought-iron pipe; gas fittings.

Testing drainage systems with water, air, smoke, and chemicals.

Steam, hot-water, and hot-air heating. Piping buildings for various systems of heating, such as steam, one-pipe; steam, two-pipe; hot water, direct-indirect, high and low pressure; hot air.

Setting and connecting radiators, making and placing coils.

FOURTH YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $22\frac{1}{2}$ hours per week.)

Dynamos and motors:

Types; difference between direct current and alternating current, installation.

Location and foundation requirements.

Starting and stopping appliances.

Brushes, their purpose and care.

Commutator, care, treatment for high and low bars, how to remedy; preventing shorts between bars.

Armature, its purpose and construction, heating, shorting, testing, and repairing. Field coils, series, shunt, and compound, testing for shorts and grounds; how to repair.

Reversing a motor; necessity and how accomplished.

Switchboards:

Location, care, and management; instruments mounted on board.

Care and management of circuit breakers.

Ground detectors, voltmeter and ammeters and other instruments.

Define volt, ampere, ohm, Ohm's law, phase, cycle, and other electrical terms.

Reading of electric meters.

Refrigeration:

In schools where there are refrigerating plants students should be given instruction with reference to their installation and operation.

General review of work of previous years.

Exercises in the interpretation of plans and specifications and in making estimates of material and labor for different kinds of work, including the power plant, plumbing, heating, electric wiring.

Give special attention to the use of catalogues, tradesmen's handbooks, and trade journals.

Continue practice in repair and more difficult construction work.

Require students to plan and execute work acting as advanced foremen.

MASONRY, INCLUDING CEMENT, BRICK, STONE, PLASTERING.**FIRST YEAR.**

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week; application, $20\frac{1}{2}$ hours per week.)

Talks to students on the different features of the trade which they must master to become efficient mechanics.

Names, classification, and cost at current prices of tools and other equipment with instructions as to their use and care.

Trowels, chisels, hods, hammers, plumb rule, straightedge, pointing rule, line and pins, 2-foot rule, level, try-square, bevel, pickax, screens, shovels, scutch, sledges, beading tools, jointers, groovers, edgers, tampers, gutter tools, rollers, plasterer's hawks, darbies, floats, concrete mixer, rock crusher, pipe mold.

Teachers should give thorough instruction not only on the points above mentioned, but also on such additional subjects as may be essential to an intelligent and comprehensive understanding of the subject.

Materials:

Different grades, their use and cost.

Lime, brick, tile, stone, cement, sand, gravel, plaster, hair, lath, lumber for forms and scaffolds, iron for reinforcing concrete.

Talks and exercises:

Building foundations—

Determining depth and width, considering character of building, climatic, and soil conditions.

Excavating to exact measurements; squaring and leveling trenches; bracing banks to prevent caving.

Making of forms; construction of footings.

Proportioning for concrete; mixing and placing concrete; wet and dry mixture; protection of concrete after placing; removing of forms.

Wall construction—

Concrete, brick, stone.

Concrete: Blocks, reinforced.

Stone: Rubble, coursed rubble, ashlar, coursed ashlar.

Brick: Common, pressed.

Bonding: Why necessary, various kinds.

Mortar—

Materials: Lime, sand, cement; slaking and running off lime.

Mixing mortar for brick and stone work; adding cement to lime mortar; tempering mortar.

Spreading mortar for stone or brick walls; size of joints, pointing.

SECOND YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week; application, $20\frac{1}{2}$ hours per week.)

Concrete:

Continue practice in concrete construction in building footings, walls, piers, steps, sidewalks, floors, curbings, gutters, copings, arches, cisterns, silos, posts, slabs, girders, columns, blocks, pipe.

Effects of weather; freezing, expansion, etc.

Strength of arches and walls.

Methods and materials for reinforced concrete construction.

Road building.

Stonework:

Continue practice in stonework; laying out and cutting stone for caps, sills, corners, jambs, steps, piers, arches, copings.

Laying and bonding stone footings, piers, various kinds of walls, curbs.

Backing up stone facing with brick, concrete, or stone.

Openings for windows and doors.

THIRD YEAR.

(Forty weeks.—Instruction, 1½ hours per week; application, 22½ hours per week.)

Bricklaying:

Continue practice in bricklaying.

Attention to speed, accuracy, and neatness of construction of piers, walls (solid, hollow, and veneered) of various thickness, arches, flues, mantels, pilasters, quoins, panels, corbels, and cornices.

Bonding, pointing.

Joining new walls to old walls.

Building in hangers for floor beams.

Openings for windows and doors.

Setting frames.

Construction of boiler settings, furnace linings, use of fire brick and fire clay.

Construction and lining of stacks.

Repairs to ovens.

Paving.

Plastering:

Mixing lime mortar; proportions of lime and sand; judging sand for sharpness, purity, and grade; screening sand.

Mixing scratch and brown mortars.

Lathing with wood, metal lath, or plaster board.

Mixing and putting on finish.

Spreading plaster on different surfaces, lath, plaster board, brick, and stone.

Proportioning and mixing cement mortar.

Making a sand finish.

Plaster for exterior of building.

Rough casting; proportions of cement, sand, and lime.

Splatter-dashing buildings and walls.

Protection of plaster from heat, cold, and wind.

FOURTH YEAR.

(Forty weeks.—Instruction, 1½ hours per week; application, 22½ hours per week.)

General review of work of previous years.

Exercises in interpretation of plans, specifications, and estimating material and labor for all kinds of mason work. Give special attention to the use of catalogues, tradesmen's handbooks, and trade journals.

Continue practice in repair and more difficult construction work in all lines of masonry. Require students to plan and execute work, acting as advanced foremen.

PAINTING.

FIRST YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week; application, $20\frac{1}{2}$ hours per week.)

Talks and exercises:

Tools and materials; names, cost, uses, and care.

Preparation of plaster, brick, and wood surfaces; patching, sizing, priming.

Mixing colors.

Painting walls and ceilings; finishing surface, flat or glossy; stippling.

Removing old paint.

Puttying and sandpapering.

Painting woodwork, exterior and interior.

Stripe and two-color work.

Preparing ground for enamel; applying enamel, glossy, flat, and rubbed finish.

Whitewashing; preparation and application.

Kalsomining; preparing of plastered surface; preparation of size; sizing; preparing the kalsomine in various colors; stenciling.

Cutting and setting glass; puttying.

Ladders, scaffolding, and staging for interior or exterior work.

Roof painting.

SECOND YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week; application, $20\frac{1}{2}$ hours per week.)

Hardwood finishing; filling with paste and liquid filler and shellac; staining in various colors; oiling and waxing floors.

Varnishing; glossy, flat, rubbed, and waxed finish on hardwoods; removing old varnish.

Graining, gilding, bronzing, stenciling, decorating.

Paper hanging: Preparation of walls and ceilings; method of hanging on side walls, ceilings, and wood partitions; making paste, cutting, trimming, pasting, hanging. Selection of paper, harmony of colors, grades, and costs.

Lettering and sign painting: Design of plain letters; proportion and style of letters, laying out and spacing; arrangement and grouping of letters; shading and blocking; lettering on cardboard, wood, metal, glass, cloth, canvas, muslin.

THIRD YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $22\frac{1}{2}$ hours per week.)

General review of work of previous years. Continue practice in painting, kalsomining, decorating, varnishing, and papering in the upkeep of the school plant and in new construction.

Practice in estimating materials and labor. Require students to plan and execute work, acting as advanced foremen.

Give special attention to the use of catalogues, color cards, hand-books, and trade journals.

PRINTING.

The school print shop should be conducted as nearly as possible in conformity with the methods employed in the best commercial plants of similar size, equipment, and capacity. The real object should be to train students who develop an aptitude and liking for the business to become competent workmen in the several departments of the printer's art.

FIRST YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $22\frac{1}{2}$ hours per week.)

Apprenticeship lectures covering first principles and fundamentals of the trade.

Care of machinery ; care of press rollers ; care of motors and belts ; operating stitching machine ; hand folding ; compiling signatures ; handling of paper ; perforating ; punching ; padding ; technical terms ; taking proofs ; care of type material ; operation of mailer and mailing school publications ; feeding platen presses ; learning case ; use of compositor's stick.

Locking up platen-press forms ; care of ink ; operation of job press ; fountains ; component parts of job press ; different qualities of ink and their adaption to different stocks ; register work ; care of cuts ; platen-press make-ready ; experience in platen-press printing ; simpler forms of binding ; straight composition ; correction of proofs and interpretation of marks ; operation of cutting machine.

SECOND YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week ; application, $22\frac{1}{2}$ hours per week.)

Experience in the more particular kinds of make-ready on platen presses ; halftone make-ready ; register and color work ; care and feeding of press ; use, care, and setting of rollers ; point system ; capitalization and punctuation ; more complicated experience in hand composition ; reading, marking, and correction of own proofs ; in-

struction in complicated lockups. Imposition of type pages; making up; laying out forms; locking cylinder forms; simpler forms of job composition; cutting stock; rudiments of color harmony; more difficult straight composition; tabulated and rule work; correction and care of mailing lists; simpler forms of make-ready on cylinder press; proper use of cylinder press fountain; inks and stocks best adapted for cylinder-press use; apprenticeship lectures.

THIRD YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week; application, $22\frac{1}{2}$ hours per week.)

General job composition; component parts of cylinder press; composition and imposition of the better kinds of book and halftone matter; the proper make-up of a printed book; typographical designing; color-form composition and presswork; selection of suitable stock for the job in hand; color and halftone printing and fine make-ready, including the vignetted cut; use of reducing agents; lectures on special pressroom matters; two and three-color work on cylinder press; office economy; stock costs; study of typography; intricate composition; use of primary colors in mixing inks; mixing of tints and body colors; planning and complete execution of jobs from rough copy; careful instruction in fine halftone printing—slipsheeting, ink, spot sheets, stock, pressroom trouble, etc.; special lectures.

FOURTH YEAR.

(Forty weeks.—Instruction, $1\frac{1}{2}$ hours per week; application, $22\frac{1}{2}$ hours per week.)

Review of previous work and instruction; further work in practical commercial printing; special instruction in cylinder presswork; use of varnishes and driers; proof reading; study of mailing-list systems; printing office equipment; cost of stock and estimating on work; methods of binding; special individual instruction covering weak points; round-table discussion on selected topics, such as cut making, ink making, type making, paper making; advanced cylinder presswork; difficult composition; three and four color work; mixing and manipulation of inks and colors; overcoming pressroom troubles; printing cost systems; modern equipment; special lectures.

STUDENT RECORD CARDS.

For the purpose of ascertaining what a pupil has accomplished in the various prevocational and vocational subjects, record cards shall be kept by each vocational instructor. (See samples on following pages.)

Superintendents should adopt such plan as local conditions may make most convenient for the assembling of these student record cards in order that some one person may be held responsible for keeping a complete record of the standing, progress, and accomplishment of each student in every subject of the course taken.

PREVOCATIONAL RECORD CARD.

Each boy should devote 10 weeks to the work of this department during the three prevocational years. When he has accomplished the work as outlined in the course of study in a satisfactory manner a suitable rating should be recorded. Ratings should be based on a practical application as well as a theoretical knowledge of the principle involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197). When the pupil is transferred to another school a copy of this card should be sent to the officer in charge of the school to which he is transferred.

Name.....	Date of entry in department.	Date of leaving department.	Number of weeks in department.
.....
.....

Final ratings.		Gardening.	Remarks.
Date.	Grade.		
.....	Selection of site.....	.....
.....	Size.....	.....
.....	Fall preparation.....	.....
.....	Planning.....	.....
.....	Hotbed.....	.....
.....	Preparation of soil.....	.....
.....	Planting and transplanting.....	.....
.....	Cultivation.....	.....
.....	Irrigation.....	.....
.....	Drainage.....	.....
.....	Insect enemies.....	.....
.....	Diseases.....	.....
.....	Harvesting.....	.....
.....	Marketing.....	.....
.....	Storage and preservation.....	.....
.....	Cost and care of implements.....	.....

PREVOCATIONAL RECORD CARD.

Each boy should devote 10 weeks to the work of this department during the three prevocational years. When he has accomplished the work as outlined in the course of study in a satisfactory manner, a suitable rating should be recorded. Ratings must be based on a practical application as well as a knowledge of the principle involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197). When the pupil is transferred to another school, a copy of this card should be sent to the officer in charge of the school to which he is transferred.

		Date of entry in department.	Date of leaving department.	Number of weeks in department.
Name.....				

Final ratings.		Dairying.	Remarks.
Date.	Grade.		
		Dairy cow, types, breeds.....	
		Barn.....	
		Silo.....	
		Care of the cow and milk.....	
		Testing the cow.....	
		Breeding.....	
		Increase and its care.....	
		Marketing products.....	
		Diseases...	

PREVOCATIONAL RECORD CARD.

Each boy should devote 40 weeks to the work of this department during the three prevocational years. When he has accomplished the work as outlined in the course of study in a satisfactory manner a suitable rating should be recorded. Ratings must be based on a practical application as well as a knowledge of the principle involved.

Rating should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197). When the pupil is transferred to another school a copy of this card should be sent to the officer in charge of the school to which he is transferred.

Name.....		Date of entry in department.	Date of leaving department.	Number of weeks in department.
Final ratings.		Farming.		Remarks.
Date.	Grade.			
		Stock raising.....		
		Horses.....		
		Cattle.....		
		Hogs.....		
		Sheep.....		
		Plant production.....		
		Soil.....		
		Seed.....		
		Grains.....		
		Grasses.....		
		Legumes.....		
		Potatoes.....		
		Large fruits.....		
		Small fruits.....		
		Roads.....		
		Care of implements.....		
		Beautifying home grounds.....		

PREVOCATIONAL RECORD CARD.

Each girl should devote 40 weeks to the work of this department during the three prevocational years. When she has accomplished the work as outlined in the course of study in a satisfactory manner a suitable rating should be recorded. Ratings must be based on a practical application as well as a knowledge of the principle involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197). When the pupil is transferred to another school a copy of this card should be sent to the officer in charge of the school to which she is transferred.

		Date of entry in department.	Date of leaving department.	Number of weeks in department.
Name.....				

Final ratings.		Sewing.	Remarks.
Date.	Grade.		
		Names, uses, care, and cost of—	
		Material.....	
		Implements.....	
		Making—	
		Bag with pine cushion.....	
		Napkin.....	
		Belt.....	
		Kitchen apron.....	
		Princess apron.....	
		Petticoat.....	
		Corset cover.....	
		Drawers.....	
		Nightgown.....	
		Rompers.....	
		Plain work dress.....	
		Patching and darning.....	
		Construction and care of sewing machine.....	
		Selection of patterns.....	
		Neatness, order, accuracy, economy.....	

PREVOCATIONAL RECORD CARD.

Each girl should devote 15 weeks to the work of this department during the three prevocational years. When she has accomplished the work as outlined in the course of study in a satisfactory manner, a suitable rating should be recorded.

Ratings should be based on a practical application as well as a theoretical knowledge of the principles involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197). When the pupil is transferred to another school a copy should be sent to the officer in charge of the school to which she is transferred.

Name.....		Date of entry in department.	Date of leaving department.	Number of weeks in department.
	
Final ratings.		Laundering.	Remarks.	
Date.	Grade.			
.....	.....	Sorting clothes.....	.....
.....	.....	Removing stains.....	.....
.....	.....	Setting color.....	.....
.....	.....	Softening of water.....	.....
.....	.....	Washing, sterilizing, and rinsing.....	.....
.....	.....	Bleaching.....	.....
.....	.....	Blueing.....	.....
.....	.....	Starching.....	.....
.....	.....	Drying clothes.....	.....
.....	.....	Sprinkling and folding for ironing.....	.....
.....	.....	Ironing of unstarched clothing.....	.....
.....	.....	Ironing starched clothing.....	.....
.....	.....	Folding.....	.....
.....	.....	Care of laundry.....	.....
.....	.....	Making soap.....	.....

PREVOCATIONAL RECORD CARD.

Each boy should devote 15 weeks to the work of this department during the three prevocational years. When he has accomplished the work as outlined in the course of study in a satisfactory manner a suitable rating should be recorded. Ratings must be based on a practical application, as well as a knowledge of the principle involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197). When the pupil is transferred to another school a copy of this card should be sent to the officer in charge of the school to which he is transferred.

	Date of entry in department.	Date of leaving department.	Number of weeks in department.
Name.....
.....

Final ratings.		Farm carpentry.	Remarks.
Date.	Grade.		
.....	Names, uses, care, and cost of tools.....	.....
.....	Materials.....	.....
.....	Exercises in making—	.....
.....	Sawbuck.....	.....
.....	Wagon jack.....	.....
.....	Hammer handle.....	.....
.....	Plank drag.....	.....
.....	Stepladder.....	.....
.....	Window and door screens.....	.....
.....	Farm gate.....	.....
.....	Stanchion.....	.....
.....	Hayrack.....	.....
.....	Wagon box.....	.....
.....	Hog and chicken trough.....	.....
.....	Clothes rack.....	.....
.....	Kitchen table.....	.....
.....	Ironing board.....	.....
.....	Rustic chair.....	.....
.....	Singletree.....	.....
.....	Repairing fences, gates, floors, steps, doors, windows, screens, tables, and chairs.....	.....
.....	Plans and estimates for small house, barn, hogpen, chicken coop, root house.....	.....

PREVOCATIONAL RECORD CARD.

Each boy should devote 10 weeks to the work of this department during the three prevocational years. When he has accomplished the work as outlined in the course of study in a satisfactory manner, a suitable rating should be recorded. Ratings must be based on a practical application, as well as a knowledge of the principle involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197). When the pupil is transferred to another school, a copy of this card should be sent to the officer in charge of the school to which he is transferred.

Name.....		Date of entry in department.	Date of leaving department.	Number of weeks in department.
	
	
	
Final ratings.		Farm blacksmithing.		Remarks.
Date.	Grade.			
.....	.....	Shop equipment and cost.....		.....
.....	.....	Names, uses, and cost of tools.....		.....
.....	.....	First steps in blacksmithing.....		.....
.....	.....	Welding.....		.....
.....	.....	Soldering.....		.....
.....	.....	Hardening and tempering.....		.....
.....	.....	Sharpening plow shares, shovels, cultivators, etc.		.....
.....	.....	Repairing farm tools and implements.....		.....
.....	.....	Nailing on horse shoes.....		.....

VOCATIONAL RECORD CARD.

Each boy should devote 40 weeks to the work of this department during the vocational period. When he has accomplished the work as outlined in the course of study in a satisfactory manner a suitable rating should be recorded.

Ratings should be based on a practical application as well as a theoretical knowledge of the principle involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197).

Name.....	Date of entry in department.	Date of leaving department.	Time in department.

Final ratings.		Types and breed of farm animals.	Remarks.
Date.	Grade.		
.....	Importance of live stock, as food, for clothing, labor, and in maintaining soil fertility.	.....
.....	Origin, breeds, size, appearance, use, value, diseases, and treatment of—	.....
.....	Horses.....	.....
.....	Cattle.....	.....
.....	Sheep.....	.....
.....	Goats.....	.....
.....	Swine.....	.....
.....	Poultry.....	.....
.....	Stock judging.....	.....
.....	Breeding for best results.....	.....
.....	Management of herd.....	.....

VOCATIONAL RECORD CARD.

Each girl should devote four years to the work of this department during the vocational period. When she has accomplished the work as outlined in the course of study in a satisfactory manner a suitable rating should be recorded.

Ratings should be based on a practical application as well as a theoretical knowledge of the principle involved.

Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of a rating of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197).

Name.....	Date of entry in department.	Date of leaving department.	Time in department.
.....
.....

Final ratings.		Cooking.	Remarks.
Date.	Grade.		
.....	Equipment.....	.....
.....	Construction and care of range, gas and electric stove.	.....
.....	Water.....	.....
.....	Vegetables.....	.....
.....	Starches.....	.....
.....	Meal preparation.....	.....
.....	Methods of cooking:	.....
.....	Cereals.....	.....
.....	Fruits.....	.....
.....	Meats.....	.....
.....	Fish.....	.....
.....	Poultry.....	.....
.....	Eggs.....	.....
.....	Milk.....	.....
.....	Meat substitutes.....	.....
.....	Table service.....	.....
.....	Classification of foodstuffs.....	.....

Final ratings.		Cooking—Continued.	Remarks.
Date.	Grade.		
		Food preservation:	
		Canning fruits and vegetables.....	
		Drying fruits and vegetables.....	
		Care of milk and its products.....	
		Breadmaking, including study of wheat, flour, yeast, etc.	
		Pastry.....	
		Cakes.....	
		Salads.....	
		Frozen mixtures.....	
		Dietary studies.....	
		Children's diets.....	
		Invalid cookery.....	
		Menu making.....	
		Cost and purchase of food.....	
		Dining-room service.....	
		Household accounts.....	
		Home sanitation.....	
		House planning and furnishing.....	
		Ability to plan and execute work inde- pendently in homes and to assume responsibility.	

VOCATIONAL RECORD CARD.

Each boy should devote four years to the work of this department during the vocational period. When he has accomplished the work as outlined in the course of study in a satisfactory manner a suitable rating should be recorded.

Ratings should be based on a practical application as well as a theoretical knowledge of the principle involved.

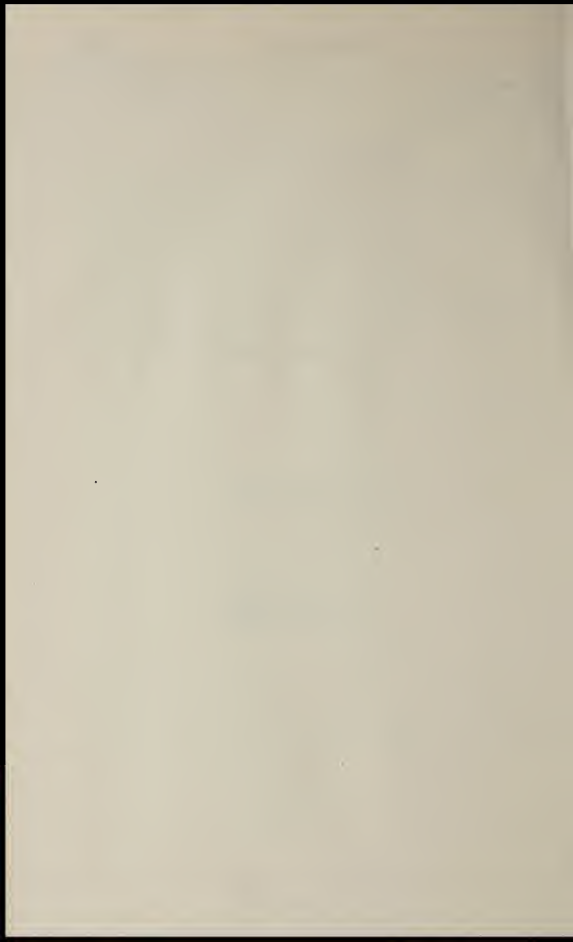
Ratings should be excellent (E), good (G), fair (F). If pupil's work is not worthy of ratings of fair, no grade should be recorded. Under "Remarks" mention anything that indicates interest, conduct, and proficiency of the pupil.

This card should be filed in folder for record of pupil (5-197).

		Date of entry in department.	Date of leaving department.	Time in department.
Name.....				

Final ratings.		Carpentry.	Remarks.
Date.	Grade.		
		Names, classification, use, care, and cost of tools.	
		Machinery.....	
		Building hardware.....	
		Lumber.....	
		Other building material.....	
		Excess in.....	
		Measuring.....	
		Planing.....	
		Sawing.....	
		Joinery.....	
		Making window and door frames and doors.....	
		Paneling.....	
		Cabinetwork—furniture.....	
		Setting studwalls and partitions, doors and window frames.....	
		Hanging doors and transoms.....	
		Fitting hardware.....	

Final rating.		Carpentry—Continued.	Remarks.
Date.	Grade.		
		Construction of shelving, drawer chests.....	
		Placing stools, aprons, casings.....	
		Laying top floors.....	
		Setting grounds.....	
		Building in mop boards.....	
		Fitting molding and quarter round.....	
		Putting on building paper.....	
		Siding.....	
		Corner boards.....	
		Water table.....	
		Building straight-run stairs.....	
		Building construction.....	
		A small cottage, if practicable, including a knowledge of and work on—	
		Foundations.....	
		Framing.....	
		Roofing.....	
		Porches and verandas.....	
		Exterior finish.....	
		Interior finish.....	
		Making plans, specifications, estimates, including labor and material, for small cottage, including problems in—	
		Roof framing.....	
		Stair building.....	
		Use of steel square.....	
		Strength of joints.....	
		Holding power of nails, screws, glue, wind pressure, snow loads, floor loads, effect of heat and moisture on wood and cement, insulation protection coatings.	
		Efficiency in use of—	
		Catalogues.....	
		Handbooks.....	
		Trade journals.....	
		Ability to plan and execute work.....	
		Efficiency as foreman.....	



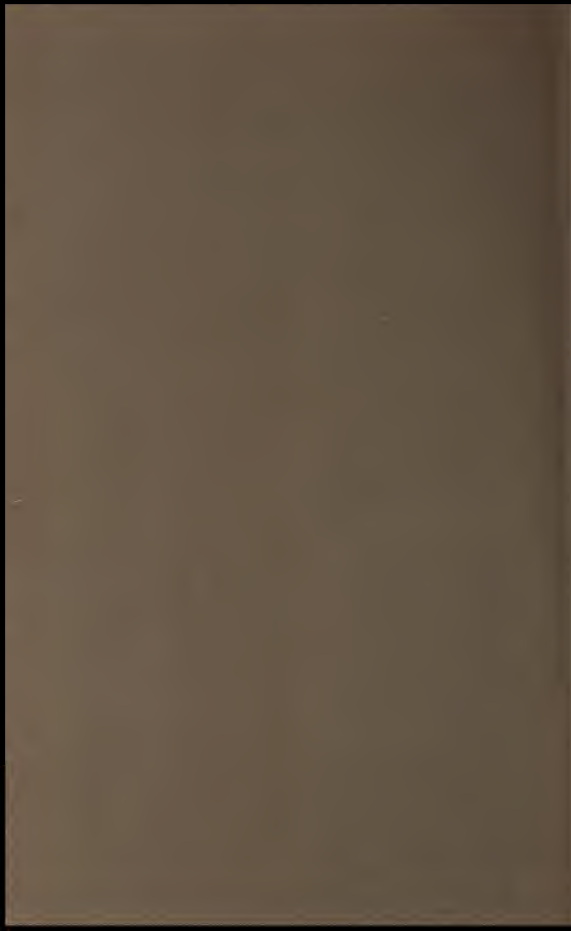












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